

# THE BULLETIN

OF THE SILESIA UNIVERSITY OF TECHNOLOGY

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# FROM THE EDITOR



The world is at a crossroads. The reality that we experienced a few or a dozen years ago, today is only a vague memory, the more acute the more stable, predictable, and safe that life appeared to be. Now, in times of war and migration crisis beyond our Eastern border, changes in priorities in European security policy, economic crises, a growing deficit of trust, and a constantly changing labour market, the academic environment is also facing a redefinition of development strategies. 2024 is an important year in the history of the Silesian University of Technology. The term of office of the current rector authorities is ending, and the Rector-Elect and Vice-Rectors invited to cooperate with him are waiting for the beginning of their mission in the university's history. Prof. Marek Pawełczyk speaks openly about the need to meet great challenges. What problems will our academic community face? What are the aims and goals of the university reality? I refer all those interested to the interview with the Rector-Elect, which Prof. Marek Pawełczyk gave to the editorial office of the Bulletin of the Silesian University of Technology.

We live in very demanding times. The university must attract students with the quality of education and scientific research. More than ever, universities should shape the environment in a spirit of responsibility and sustainable development and inspire beneficial economic and social changes. These issues were the subject of many sessions of the European Economic Congress in Katowice, where our university presented its impressive potential. We inform about the details in the May issue of the magazine.

May is an important month for the Silesian University of Technology. Our university celebrates its birthday. This year, the "Dąbrowiaci" Dance Ensemble, who for half a century have provided enjoyment to our eyes and hearts by being the best ambassador of academic traditions and Polish culture, have a special occasion to celebrate. We write extensively about the artists of the Academic Dance Ensemble of the Silesian University of Technology on the pages of our monthly bulletin.

On behalf of the Editorial Board, I wish you exciting reading,  
Iwona Flanczewska-Rogalska

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# THE SILESIAN UNIVERSITY OF TECHNOLOGY SHOWED IMPRESSIVE POTENTIAL AT THE EUROPEAN ECONOMIC CONGRESS

*Text: Katarzyna Siwczyk  
Photos: Maciej Mutwil*

THREE DAYS OF DEBATES, MEETINGS WITH SCIENTISTS, AND PRESENTATIONS AT THE EUROPEAN ECONOMIC CONGRESS IN KATOWICE ARE BEHIND US. THE SILESIAN UNIVERSITY OF TECHNOLOGY ACTIVELY PARTICIPATED IN THIS MOST IMPORTANT ECONOMIC EVENT IN THE REGION. CROWDS OF GUESTS VISITED THE SILESIAN UNIVERSITY OF TECHNOLOGY STAND – REPRESENTATIVES OF THE WORLD OF POLITICS, SCIENCE, AND BUSINESS, AMONG THEM THE AMBASSADOR OF JAPAN TO POLAND, AKIO MIYAJIMA, AND THE FORMER PRIME MINISTER AND PRESIDENT OF THE EUROPEAN PARLIAMENT - PROF. JERZY BUZEK.

**T**he Silesian University of Technology is essential in building the region's economy. Within this university's walls, we educate experts and respond to challenges. We proved this during the 16th European Economic

Congress in Katowice, which ended on Thursday.

This year's event was attended by the President of the European Parliament, Ursula von der Leyen, the Prime Minister of the Republic of Poland – Donald Tusk, and

officials worldwide. Debates and discussions held in Katowice focused on the biggest challenges facing European countries, ensuring border security and freedom. "Poland, Europe, and the world are convinced we are



ready to fight for freedom and democracy. On the other side of the border with Ukraine, we see what our future would look like if we did not act in the right way,” von der Leyen said.

“Poland is today a leader in matters that concern the future of Europe – from security to approach European institutions and procedures,” said Donald Tusk, the Prime Minister of Poland.

The Silesian University of Technology Rector, Prof. Arkadiusz Mężyk, emphasized that the world’s most critical challenges, including science, are building international security strategies based on modern technological solutions.

- “The Silesian University of Technology’s role is important in this process because we are located near arms/defence industry companies. We cooperate with the arms industry, and for years, we have trained experts in this field who work in these plants today. We also conduct scientific research in this area. Still, what is impor-





was also the deputy director of the Centre of Cybersecurity of the Silesian University of Technology, Dr Eng. Jarosław Homa.

– “We train specialists who will deal with these threats. Employees of companies also approach us from all over the country who want to update their knowledge in this area,” – said Dr Eng. Homa. “Importantly, our Centre can also help build strategies for companies and institutions that have not yet implemented a proper cybersecurity policy. This problem can no longer be ignored. Soon, regulations will come into force, forcing the employment of cybersecurity experts in every key company for the Polish economy” – added Jarosław Homa.

tant is that we focus on hard military technologies and developing cybersecurity,” said the Silesian University of Technology Rector. Prof. Arkadiusz Mężyk was one of the guests we talked with during

the “Meetings with Silesian University of Technology” at a unique congress stand.

Among the guests who talked about the activities of the Silesian University of Technology in the field of defence



Discussions and talks at the stand attracted interested parties. As part of the “Meetings with the Silesian University of Technology,” we also discussed other important topics with Prof. Dr Hab Eng. Anna Skorek-Osikowska from the Faculty of Energy and Environmental Engineering, and I talked about climate neutrality. The professor pointed out that to make the necessary changes in the economy, which are needed first in society, everyone should be convinced that energy transformation is essential and positive.

This area is what the Silesian University of Technology emphasizes by educating students and experts of the future. Another area of interest is new aviation solutions, which we discussed with Dr Hab. Eng. Jarosław Kozuba, prof. of the Silesian University of Technology.

The European Economic Congress was also an excellent opportunity to present the most exciting research projects within the walls of the Silesian University of Technology. The visitors got acquainted with the achievements of the Student Science Clubs, including a Mars rover, a drone for particular tasks, prostheses, and a robotic dog that can be used in children’s therapy.

“The mobile walking platform REXio can do a lot. It tests autonomous solutions and builds cooperation between robots and humans. In the future, it can also be used for child therapy,” said Julia Nowak, a robotics and in-





dustrial automation student at the Silesian University of Technology. The project was implemented in the Student Science Club AI-METH. It attracted interest from visitors and national media, thanks to which the group can acquire sponsors more quickly to develop innovative technologies.

The designers of the Mars rover also used the opportunity to present their potential.

“We are designing robots that can explore alien planets. We participate in competitions involving the exploration of the Moon or Mars and are constantly modernizing our vehicles with new possibilities. The rover can move around unknown terrain, function in places where a person could not safely work and collect samples and analyse them” – praised the capabilities of the Phoenix III rover Eng. Jakub Gurgul, the leader of this project.

Polytechnical Innovations attracted crowds of interested people to our stand. Among the distinguished guests were representatives of the world of politics, science, and business, among them the Ambassador of Japan to Poland, Akio Miyajima, and the former Prime Minister and President of the European Parliament, Prof. Jerzy Buzek. Representatives of companies, such as APA Group and Fujitsu Poland, also visited the stand we cooperate with daily.

The Silesian University of Technology presented its scientific potential at the stand



and in numerous debates and discussion panels concerned with essential topics. Our scientists shared their knowledge in talks about climate technologies, technologies supporting the green transformation in construction, minerals, industry 4.0, sustainable urban logistics, and the engineer's labour market. Conversations with scientists from the Silesian University of Technology recorded during the European Economic Congress can be found on our university's YouTube channel. ■



The event was funded by the EU. The views and opinions expressed are solely those of the author(s) and do not necessarily reflect the views and opinions of the European Union or the European Research Executive Agency (REA). The European Union and the REA are not responsible for them.

The event was also co-financed by the Silesian Voivodeship – Co-organizer of the European City of Science Katowice 2024.



# AMMONIA – THE FUEL OF THE FUTURE?

Text: Anna Świdarska  
Photos: by Activate Project archive

AN EMISSION-FREE, ENVIRONMENTALLY FRIENDLY TRACTOR POWERED BY AMMONIA. IS AMMONIA A VIABLE SOLUTION? SCIENTISTS FROM THE SILESIAN UNIVERSITY OF TECHNOLOGY HAVE DEVELOPED A TECHNOLOGY THAT ENABLES AMMONIA TO BE AN ALTERNATIVE FUEL IN THE AGRICULTURAL SECTOR. THIS ECOLOGICAL SOLUTION IS PART OF THE SUSTAINABLE DEVELOPMENT STRATEGY AND HAS ALSO OPENED UP NEW RESEARCH AREAS TO USE AMMONIA IN THE ENERGY SECTOR.

The development of ammonia combustion technology in a compression-ignition engine, or a diesel engine most commonly used in agriculture, is the result of research work of Prof. Wojciech Adamczyk and Dr. Hab. Eng. Grzegorz Przybyła from the Department of Thermal Technology of the Faculty of Energy and Environmental Engineering. Such a solution is part of the drive to reduce greenhouse gas emissions and develop alternative clean energy – one of humanity's most important challenges. The modified ammonia-powered diesel engine was first the subject of research in the laboratory, and now it powers the prototype orchard tractor. The drive system is powered by ammonia and biodiesel, consisting of components made of plant extracts, a zero-emission fuel.

– Ammonia burns with difficulty in an engine due to the small

combustion chamber's high speeds. We need an additional activator to initiate ignition and accelerate chemical reactions – here it is in this extra fuel. We conducted studies for different proportions of biodiesel and ammonia. The largest share of ammonia we have achieved is the replacement of 80% of the chemical energy of biodiesel – explains Wojciech Adamczyk.

Ammonia (NH<sub>3</sub>) is an inorganic chemical compound of nitrogen and hydrogen, widely used in agriculture to produce fertilizers. It is a toxic substance, so to minimize the risk of any hazards associated with its storage and use as fuel, the researchers chose to construct an ammonia engine for the agricultural sector. In case of installation leakage, ammonia rises into the atmosphere. In addition, it readily binds to water, and in the form of ammonia water, i.e., de facto fertilizer, am-

monia molecules will fall into the soil. The number of diesel-powered machines in agriculture is enormous; they are also heavily loaded and consume a lot of fuel. The introduction of green ammonia, which is generated by green wind or solar energy (as opposed to blue ammonia produced from natural gas) as an alternative fuel, would allow the decarbonization of agriculture and eliminate carbon dioxide emissions.

“Our idea was to create a prototype of an orchard tractor with a simple, single-cylinder engine. Initially, we sought solutions to eliminate a large ammonia leak in the exhaust gas, which did not burn completely. This goal we achieved by introducing direct, multi-point ammonia injection into the cylinder,” explains Professor Grzegorz Przybyła.

To limit the toxic nitrogen oxides (NO<sub>x</sub>) produced during ammonia combustion, the researchers decided to use ammonia in the engine's liquid phase-in, allowing control of the ammonia combustion process.

“During the research, it turned out that the constructed pump has some disadvantages, so we decided to use an intermediate system. We have liquid ammonia in the cylinder, which we compress with nitrogen. The ammonia is delivered directly in the liquid phase to the injector by introducing high-pressure nitrogen into the cylinder. Thanks to this approach, we can conduct a multi-point injection of ammonia during the combustion



From the left: Prof. Dr Hab. Eng. Prof. Wojciech Adamczyk, Dr Hab Eng. Grzegorz Przybyła, prof. SUT and Ph.D. students Ebrahim Nadimi, Mateusz Proniewicz, and Dr Eng. Łukasz Ziółkowski

process, and thus control the combustion process and release harmful compounds,” - says Prof. Adamczyk. “Multi-point fuel injection has the advantage of allowing a small dose of ammonia to be delivered in the final phase, which will support the exhaust after-treatment system,” adds the professor.

Diesel engines use SCR catalysts, to which AdBlue, an aqueous urea solution containing ammonia, is added. AdBlue is designed to decompose harmful nitrogen oxide particles so that the exhaust gases distributed are less damaging to the environment. In the engine constructed by scientists of the Silesian University of Technology, ammonia is found in the fuel and exhaust gases, so an additional AdBlue system is no longer needed. So, is ammonia the fuel of the future and a revolution in the automotive industry?

– “Traction motors used in cars are characterized by a wide range of rotational speeds, up to several thousand revolutions per minute. The higher the speed, the less time to burn the fuel – and in particular, ammonia burns slowly – therefore, the proportion of ammonia at higher speeds is limited,” - explains Prof. Przybyła. “When we looked at the literature before we started the project, there was little knowledge about using ammonia as a fuel. Currently, more units and enterprises are becoming interested in using ammonia in various industries, such as maritime transport and rail, and also in the energy field,” adds Prof. Adamczyk.

Ammonia is already successfully used as a fuel in the marine sector, where the engines of large vessels operate at speeds of about 80 rpm. The ammonia engine developed by scientists of the Silesian University of Technology was created as part of the international project ACTIVATE in cooperation with the Norwegian University of Science and Tech-



nology, the Hugon Kołłątaj University of Agriculture in Krakow, and an industrial partner – LOGE Polska Sp. z o.o. In addition to the ammonia tractor prototype, the project opened up new research issues and opportunities for cooperation and development.

“These are primarily issues related to exhaust gas purification, the study of the influence of ammonia on engine components, due to its corrosive properties, the way of high-pressure pumping of this fuel, which we now force with nitrogen,” - says Prof. Adamczyk - “but also hybrid systems, i.e., the use of ammonia in a positive ignition engine, i.e., one powered by petrol or natural gas, to generate electricity.”

The researchers have partnered with an industrial partner who has researched solutions for using ammonia in a positive-ignition engine for energy purposes. Different uses of ammonia in the power industry are also sought because it can be stored easily, unlike hydrogen, whose long-term storage is problematic. Ammonia is also being studied as an attractive alternative to hydrogen storage.

– “It is also about the optimal use of hydrogen and stabilization of renewable energy sources (RES)” - adds Prof. Przybyła. “When there is no wind, or the sky is cloudy, we

have stored hydrogen in ammonia, which we can store for a long time. We can quickly start the internal combustion engine – it will change from cold to full power in several dozen seconds. These can be rapid response systems when fuel needs to be delivered to the grid. We can use ammonia to produce energy.”

One of the priorities for sustainable development is the search for zero-emission alternatives to fossil fuels to achieve climate neutrality by 2050. The participants of the 16th European Economic Congress in Katowice heard about the ACTIVATEngine technology developed by scientists at the Silesian University of Technology. The solution has immense potential to hit the market shortly and contribute to an immediate reduction of carbon emissions. ■

The research was financed from Norwegian and Polish funds as part of the ACTIVATE <https://ammoniaengine.org> project (contract no. nor/POL-NOR/ACTIVATE/0046/2019-00).

## MORE ABOUT SCIENTIFIC RESEARCH:



# THE WHEELCHAIR FROM THE 3D PRINTER WILL HELP THE LITTLE ONES

*Text: Jolanta Skwaradowska  
Photos: Marek Wyleżół*

ALEKSANDRA MIKULIKOVA, A PHD STUDENT AT THE SILESIA UNIVERSITY OF TECHNOLOGY, DESIGNED A WHEELCHAIR PRODUCED IN 3D PRINTING TECHNOLOGY. THE WHEELCHAIR IS INTENDED FOR CHILDREN WITH MOTOR DISABILITIES OF THE LOWER LIMBS, AS WELL AS FOR THOSE WHO HAVE SUFFERED INJURIES, E.G., FRACTURES OR DISLOCATIONS OF THE LOWER LIMBS.

**W**e created the idea for a wheelchair from a 3D printer while working on a PhD. Initially, my work focused on optimizing the topological construction of existing rehabilitation devices – especially active wheelchairs.

However, due to the market analysis, questions arose: At what age was the youngest active wheelchair user? Are there any wheelchairs designed for small patients? And if so, what do they look like? Since then, I have focused on the youngest patients and started to look for solutions that provide children with motor disabilities with independence in movement

– says Aleksandra Mikulikova. The vehicle is primarily a rehabilitation device that activates the youngest patients to move independently. Still, it can also function as a toy, enabling children to participate and engage in play with their peers. We made the wheelchair of five 3D-printed body elements and ten-



inch wheels, often used in cross-country bikes. In addition, three swivel wheels on the device's underside stabilize the vehicle and prevent it from overturning.

“There are only three main screws in the whole vehicle that block the components from moving. The seat is equipped with a wedge that prevents the child from sliding out of the wheelchair, and there are mounting holes for the seat belt in the backrest. The researcher explains that the vehicle “grows” with the child from about nine months of age (the age at which the child acquired the ability to sit independently) to about four years.

The manufacture of a wheelchair is a short and straightforward process compared to the construction of other rehabilitation devices. – We can load the 3D models I developed (five body elements



Once all the components are complete, what remains is to assemble the vehicle and fix the wheels. The tools needed to make the cart are a laptop, 3D printer, soldering iron, and Allen keys.

“The challenge in designing children’s products is the rapidly changing proportions of the users’ body, which af-

can also adjust the distance of the seat from the axis of the wheels, which adds to the PhD student.

The wheelchair can be used primarily by children with permanent lower limb movement disability resulting from various diseases or delayed motor development but also by children who have suffered some injuries, e.g., fractures, dislocations of lower limbs, or arthritis. The vehicle is primarily designed to provide independence in movement, so the user must be able to move the truck’s wheels with the strength of their hands.

“These vehicles can restore dignity to children related to freedom and independence of movement, for example, when playing with peers or siblings. Usually, small children with lower limb disabilities crawl on the floor to reach some toys or get to a specific place. Having such an active wheelchair, children can play in a sitting position on par with their peers and freely move around the

**Having such an active wheelchair, children can play in a sitting position on par with their peers and freely move around the room. In addition, this vehicle looks like a toy, so it can automatically become an element of fun, not a rehabilitation device.**

plus two axes) into the 3D printer software and print each. The printing time of these items for a single device takes eight to ten days. To build the wheelchair, it is also necessary to purchase wheels, plain bearings, and fasteners. All these elements are readily available for sale in stationary or online stores – says Aleksandra Mikulikova.

ffects the design itself and the length of use of this product. When designing the vehicle, I tried, as far as possible, to adapt its structure to the target users’ dimensions by adjusting the retractable footrest in three positions. In addition, the seat has cuts on the sides to provide space for the changing width of the baby’s hips. In addition, you

room. In addition, this vehicle looks like a toy, so it can automatically become an element of play, not a rehabilitation device that stigmatizes the user and is associated with a disease – emphasizes Aleksandra Mikulikova.

The vehicle is intended for self-use by the patient – just like active wheelchairs, which

children with physical disabilities and healthy children. “During the tests, we observed ergonomics of use, how children behave, their reactions to the vehicle, and ease of use. A positive feedback response was the children’s perception of the vehicle regarding a toy. An interesting phenomenon



**During the tests, we observed the ergonomics of use, how children behave, their reactions to the vehicle, and ease of use. A positive feedback response was the children’s perception of the vehicle regarding a toy.**

users manually drive. However, there is also a mounting hole in the seat for the pusher, thanks to which the carer can help the child move.

We have already tested the wheelchair. In addition to virtual tests (including endurance and ergonomics), the prototype was evaluated physically by a group of users aged one and a half to four years, both by chil-

was that children intuitively, without our instructions, began to move on it – adds the doctoral student.

The cost of manufacturing the cart is less than 800 PLN. All printed elements of the prototype were manufactured from PLA filament (polylactide) on printing devices, available in the Department of Fundamentals of Machinery Design of the Silesian

University of Technology. – The cost of manufacturing the prototype I calculated included costs related to printing (material – PLA filament, power consumption) and the purchase of additional elements (wheels, sliding bearings, fasteners). She explains that the cost does not include the possible purchase and depreciation of a 3D printer.

As the researcher emphasizes, there is a chance that the wheelchair will be immensely popular to use. – My original vision for the distribution of the product was to provide assembly instructions and models to be downloaded via the website or to enable printing of these vehicles at the Silesian University of Technology. At the moment, the project stopped in the testing phase of a fully functional prototype. To protect it, a patent application was sent on behalf of the Silesian University of Technology – says Aleksandra Mikulikova.

The inspiration for the design of the wheelchair was the philosophy of Cosmotech Sp. z o.o. from Bytom and Invent Medical Group from Ostrava, Czech Republic. Both companies design and manufacture extraordinary rehabilitation products using 3D printing. ■



# INTEGRATION IS ESSENTIAL

*Text: Anna Świdarska  
Photo: Tomasz Stokłosa*

NEARLY ONE-THIRD OF THE STUDENTS ENROLLED AT THE SILESIAN UNIVERSITY OF TECHNOLOGY'S DOCTORAL SCHOOL COME FROM ABROAD. WHAT PROBLEMS DO PHD STUDENTS FROM ALL OVER THE WORLD FACE, WHAT ATTRACTS THEM TO THE SILESIAN UNIVERSITY OF TECHNOLOGY, AND WHY IS INTEGRATION WITH THE INTERNATIONAL ENVIRONMENT THE KEY TO SUCCESS? THESE ARE THE PROBLEMS THAT HAMZA MUMTAZ, A PHD STUDENT FROM PAKISTAN, TALKS ABOUT.



**D**uring the Integration Day, organized by international students studying at the Silesian University of Technology, Hamza Mumtaz was elected the president of the Council of PhD students abroad. He will represent the interests of a large group of PhD students from various parts of the world who do not have a representative in the structures of PhD Students' Self-Government at the Silesian University of Technology. What assimilation looks like in a unique environment, and often on another continent, how this process can be facilitated, and what he will do as the chairman of the Council can be heard in the next English-language episode of the Silesian University of Technology podcast.

“We saw the need to create a platform to collect all the issues and problems of the international community and pass them on to the authorities. In this way, it will be easier to address

certain issues. It is also about better communication, integration, and networking—after finishing our PhD, we will spread worldwide; we want to contact each other in the context of our research work,” said Hamza Mumtaz. We invite you to listen to the whole conversation. ■





# BREAD FROM THE VENDING MACHINE

Text: Katarzyna Siwczyk  
Photos: Grzegorz Krawczyk

SCIENTISTS FROM THE FACULTY OF MECHANICAL ENGINEERING ARE DEVELOPING ALGORITHMS WE CAN USE IN STORES AND VENDING MACHINES TO SUPPLY PEOPLE WITH FOOD. WHAT IS ESSENTIAL IS THAT THE GOODS WILL GO FRESH TO THE CUSTOMER, AND THE SELLER WILL NOT PARTICIPATE IN THE ENTIRE PROCESS. THE FIRST PROJECT OF THIS TYPE, DEVELOPED IN COOPERATION WITH SCIENTISTS OF THE SILESIA UNIVERSITY OF TECHNOLOGY, WAS OFFICIALLY LAUNCHED IN THE PARKING LOT IN FRONT OF THE FACULTY OF MECHANICAL ENGINEERING.

**T**he self-service store project is another initiative created with our scientists' participation. The project was co-financed by the National Centre for Research and Development. A consortium led by HemiTech sp. z o.o. carried the project, and one of the partners was the Silesian University of Technology. During the project's implementation, a coronavirus

pandemic broke out, further strengthening the need to implement projects limiting the store's direct contact with customers.

"The need to automate the sales process has proven important even after the pandemic. Automation eliminates the problem with the availability of personnel, thanks to which such a sales point, as we can see here, can work 24 hours a day,

seven days a week," said Michał Pajączek, President of HemiTech sp. z o.o.

The role of the scientists of the Silesian University of Technology in this project, among other things, was to prepare appropriate algorithms using artificial intelligence methods for the needs of the subsystem used to plan the store's inventory, following the current needs of customers and the opti-



**We developed algorithms that analysed the historical data of other brick-and-mortar stores. Based on these actual data, we trained our algorithms. In this way, we can prepare a system for supplying points of sale with a specific product at a particular time.**

mal placement of goods in the warehouse.

“We developed algorithms that analysed the historical data of other brick-and-mortar stores. Based on these real data, we trained our algorithms. In this way, we can prepare a system for supplying points of sale with a specific product at a specific time,” - explains Prof. Wojciech Moczulski from the Faculty of Mechanical Engineering, who was the head of the Silesian University of Technology team participating in the project.

Thanks to this system, the point of sale will offer goods that customers willingly buy. The system monitors on an ongoing basis what goods have the most significant sales, at what times, etc. Depending on the location of the automated shop, these needs may vary.

A test automated self-service bakery display was erected in the Faculty of Mechanical Technology parking lot. This solution is more difficult because the product inside must be fresh. For example, cream cakes or salads must be given to the customer so they do not lose their consistency, taste, and aesthetic value, i.e., they are not overturned or crushed.

“The test phase is about checking how the unit in the form of a bakery site works, but in further plans, this project will be much more extensive. In May, we want to present a fully automated round-the-clock warehouse, which will already offer many more goods,” adds Prof. Moczulski.

Engineers from the Silesian University of Technology are also working on algorithms that will help optimize energy consumption in such a store and shorten order picking time. To this end, they use the most modern technologies of Industry 4.0, based on digital twins. The project assumes that orders in an automated store will be placed as in a traditional online store, with the difference that you can order goods for a specific time for collection in a particular place where the warehouse or store is located.

Although the solutions used in this project are not surprising because they can be compared to already operating coffee machines, bars, or online shopping, the phenomenon is that there have been many restrictions so far for food products with a short consumption period.

The bakery site at the Faculty of Mechanical Engineering

is an excellent place to evaluate all proposed solutions before implementing them on a larger scale.

“The fact that this site was located here, on the Silesian University of Technology campus, allows for further research. When we collected the opinions of the passengers of the autonomous bus, we collected a lot of data, which will help us design the next solutions. In this case, we can also check how residents and students accept modern technologies and how the designed innovations work in practice,” added Dr Eng. Anna Timofiejczuk, Prof. SUT, the Dean of the Faculty of Mechanical Engineering.

As with other automation-based projects, the question is whether modern warehouses and stores can eliminate people from work. In this situation, traditional sellers may disappear from the market.

“I wouldn’t say that the project eliminates people from work. When we do not need sellers, other employees, for example, those supplying fresh goods, are necessary. We are introducing automatic systems to perform work that employees no longer want. However, there are processes in which people are still irreplaceable, such as preparing all these confectionery and bakery products. The interest of employers and store chains in implementing such solutions is remarkably high,” added President Pajączek.

An automatic grocery store with a rich assortment is about to be launched in the Gliwice district. ■

# PROF. MAREK PAWEŁCZYK IS A RECTOR-ELECT OF THE SILESIAN UNIVERSITY OF TECHNOLOGY

opracowanie: Jolanta Skwaradowska  
Photos: Maciej Mutwil, mat. Politechniki Śląskiej

THE ELECTORAL COLLEGE HAS ELECTED THE NEW SILESIAN UNIVERSITY OF TECHNOLOGY RECTOR FOR 2024-2028. THIS FUNCTION WILL BE HELD BY PROF. MAREK PAWEŁCZYK, PHD, D.SC., ENG., CURRENT VICE-RECTOR FOR SCIENCE AND DEVELOPMENT. HE WILL REPLACE PROFESSOR ARKADIUSZ MĘŻYK IN THIS POSITION.



study, develop your passions and interests, and fulfil your dreams. I am glad that the goals that I mentioned in my program have been enriched with your ideas. I see it as a great commitment. This is my declaration—” said Prof. Marek Pawełczyk, PhD, D.Sc., Rector Elect—shortly, after announcing the election results. Professor Marek Pawełczyk has been an acting Vice-Rector for Science and Development at the Silesian University of Technology since 2016. He is

**T**he elections took place on 23 April 2024. Two candidates applied for the post of the Rector of the Silesian University of Technology: Prof. Marek Pawełczyk PhD, D.Sc., Eng., and Krzysztof Wodarski PhD, D.Sc., Eng., prof of the Silesian University of Technology. Professor Pawełczyk won 232 votes out of 295 cast.

“I would like to thank you for appreciating my work so far. Thank you for trusting my program. You have discussed this with me

during debate meetings and by sending questions. You are always truly kind and always care about the university. As I thank our community, I think of employees, PhD students, and students. I will be working with an excellent group of vice-rectors. We will be open to dialog and discussion. I hope that our university will develop very dynamically. We will gain national and international recognition, and the Silesian University of Technology will be an excellent place to work,

a specialist in automation, digital signal processing, and vibroacoustics. He has spent his entire professional life at the Silesian University of Technology and the Faculty of Automatic Control, Electronics, and Computer Science, where he heads the Department of Measurements and Control Systems. At the Silesian University of Technology, he is currently responsible for, among others, the Initiative of Excellence – Research University IDUB and the European University EU-RECA, as well as several univer-

sity-wide programs and initiatives. In particular, he developed the principles and implemented the PBL - project-based learning method. He is also the originator and author of over thirty pro-quality programs. As a scientist, he managed many projects and scientific

and research works. Currently, he coordinates the in-NOVA research project within the Horizon Europe program, in which the Silesian University of Technology is the leader. He is the author or co-author of over 250 scientific publications and numerous implementations in industry.

Professor Pawełczyk is a correspondent member of the Polish Academy of Sciences, a member of the Presidium of the Katowice Branch of the Polish Academy of Sciences and the Presidium of Automatics and Robotics of the Polish Academy of Sciences, and chairman of the Metrology Committee. He served as chairman of the



Scientific Policy Committee, as well as a member of numerous committees and teams at national and international levels. He served as president or vice president of the global scientific society for several years.

The new Rector is the winner of many awards and distinctions, such as the individual Award of the Ministry of Science and Higher Education, the Award of Division IV of the Polish Academy of Sciences, the FIAT, SIEMENS Awards, or the Gold Medal of Honor for Merit for the Silesian Voivodeship. In 2023, Prof. Marek Pawełczyk won the “European Universi-

ties – Alliances of the Future” competition in the personality category, organized by the National Agency of the Erasmus+ Program and the European Solidarity Corps. He received the title of Honorary Citizen of the Bobrowniki Commune.

In his program, the new Rector treats the university as equally essential and consistently declares that he will fulfil the university’s three missions: education, research, and activities to benefit society and the economy. He will strive for continuous improvement of working and educational conditions, modernizing infrastructure, improving organizational culture, and creating a friendly and creative atmosphere conducive to the dynamic development of individual careers. He is aware that some solutions at the university require improvement, and he intends to do so courageously, respecting the achievements so far, listening to all opinions, and making decisions prudently.

The new Rector’s motto is: “Our Silesian University of Technology. Let’s take care of it together.” Professor Marek Pawełczyk will become the Rector of the Silesian University of Technology on 1 September 2024. ■



# LET'S REACH BOLD GOALS!

Interviewer: Iwona Flanczewska-Rogalska  
Photos: private archives of Prof. M. Pawełczyk, Maciej Mutwil

LET US CREATE AND DISPLAY CONDITIONS THAT PROVE THAT AT OUR SILESIAN UNIVERSITY OF TECHNOLOGY, ONE GAINS OPPORTUNITIES NOT AVAILABLE IN OTHER UNIVERSITIES OR INSTITUTIONS. OUR UNIVERSITY IS A MODERN UNIVERSITY THAT LISTENS TO OPINIONS, RESPONDS TO CHANGE, CARES FOR ALL GROUPS, AND LEARNS, NOT SO MUCH FROM MISTAKES, BUT FROM THE SUCCESSES OF THOSE UNIVERSITIES TO THE POSITIONS OF WHICH WE WOULD LIKE TO ASPIRE – SAYS PROF. MAREK PAWEŁCZYK, THE NEW RECTOR OF THE SILESIAN UNIVERSITY OF TECHNOLOGY IN THE TERM 2024-2028.

**Iwona Flanczewska-Rogalska:** Silesian University of Technology is one of the leading national universities. But that does not mean we can rest on our laurels. The market for academic services is extremely competitive, supported by the demographic situation. In the election program, you pointed out that we face many challenges. What do you mean by this? Please tell us how we intend to achieve this.

**Prof. Marek Pawełczyk:** The Silesian University of Technology is already one of the most active universities in the country. I want to thank everyone who worked for this. We have been awarded Excellence Initiative – Research University, IDUB, in the competition. A few months ago, the International Panel of Experts gave us a positive assessment, appreciating our

achievements and the changes at the Silesian University of Technology since 2020. We have been co-creating the European University EURICA-PRO since the beginning of its existence. We conduct large university-wide projects and many research projects in modern education. It gives a lot of satisfaction, which is a reason for pride for all community groups. We are still rightly expecting more. Many issues require improvement in organization, didactics,

and research to strengthen our position in the national and international arena. We must deal with the consequences of the noticeable drop in student numbers we have experienced in recent years. The reason for this is not only demography but also intense competition in the form of non-public universities, which are less constrained by the corset of rules they must meet. That is why it is so vital to modernize education in terms of offer and

**The success of the university is primarily determined by the people. Of course, the efficiency of functioning, offer, reliability, flexibility, and dynamism are essential – all this is possible thanks to people, their commitment, and their sense of responsibility. That is why my motto is: "Our Silesian University of Technology. Let us take care of it together."**



form. We distinguish ourselves by PBL projects, which we implemented with pupils of secondary schools, and by international cooperation and the activity of student Science Clubs.

This way, we reach talented young people. At the university, we still need greater flexibility,

individualization of approach, and the creation of unique conditions for work and leisure. The same is true for research: we cannot seek justification only for insufficient scientific funding. Let us create and expose conditions that will prove that our Silesian University of Technology one can gain opportunities that are not available in other universities or institutions, that this modern university, which listens to opinions, responds to change, cares about all groups and learns itself, not so much from mistakes, but from the successes of those universities to the position of which we would like to aspire. For this, we need the involvement of our whole community, creativity, and the activity of all of us.

**The university has three missions. What changes are expected from this new term? What will you insist on?**

These missions are education, research, and service to the community and economy. They are equally important. In the electoral program, I have declared that I want to implement them harmoniously because these missions should not be treated separately. The more research, education, and external cooperation intertwine, the more attractive and complete our offer will be in every respect. I want to strengthen this approach in the com-

ing years. I care about our community's most extensive participation in these initiatives because the sustainable development of the Silesian University of Technology is critical. Our strength is unity, which means we are still a large university with many activities. Everyone benefits from this. This unity is the way how society and the economy

see us. We will indeed find in our structure units that are more interested in candidates for studies, units with higher results of scientific activity, or units with more lively cooperation. However, it would be difficult for them to maintain such a state if it were not for the Silesian University of Technology brand and our academic ecosystem.

For this reason, I will encourage mutual support in decision-making and actions at the university. We will strive for continuous improvement of working conditions and education, modernizing infrastructure, improving organizational culture, and creating a friendly and creative atmosphere conducive to the dynamic development of individual careers. We will strive for any programs that support improving the quality of research and education and increasing the financial satisfaction of the people involved. We will create conditions for young, talented, and ambitious people to choose the Silesian University of Technology as a place to build their future.

**Your activity so far in the work of the Rector's College has focused on developing science, pro-quality programs, and projects crucial for the university's functioning, as well as national and international programmes, such as IDUB or EURECA-PRO. Is the Silesian University of Technology waiting for even greater acceleration? Will strengthening the academic position of the university be at the top of the list of priorities?**

It is true my area of competence as a Vice-Rector included matters of science but also development. Hence, my activity in acquiring and running IDUB, EURECA-PRO programs, programs related to implementing modern forms of education, or initiatives related to the university's infrastructure, for example,



**We will strive to continuously improve working and educational conditions, modernize infrastructure, improve organizational culture, and create a friendly and creative atmosphere conducive to the dynamic development of individual careers. We will strive for all programs to support improving the quality of scientific research and education, which also increases the financial satisfaction of the people involved. We will create the conditions for young and ambitious people to choose the Silesian University of Technology as a place to build their future.**

The Student Creativity Centre and the emerging Centre for Technology and Computational Sciences. The scientific position distinguishes us from universities focused on short-term business purposes. Scientific successes play a significant role in the development of civilization and make their way into society's awareness. However, science should be viewed broadly, not only through the prism of indicators shown in evaluating scientific activities. However, these are undoubtedly particularly important because they determine the university's powers and the distribution of subsidies. I hope for our excellent lecturers who support research activities and pass on their secrets to the younger generations. We should also invest in actions, the effects of which will show eventually. If we want to maintain our current position, and our ambition is to strengthen it significantly, we should make better use of all opportunities. They can be found in cooperation

opportunities, both nationally and internationally. The percentage of publications with a co-author from abroad in the last four years, thanks to the ambitions of researchers, pro-quality programs, and the supply of our staff, moved us from the last to the first position among twenty universities applying for the IDUB program. Although many scientists have rich contacts with foreign entities, they are rarely transformed into joint research projects financed by foreign funds. We will continue stimulating international activity, seeing it as a unique opportunity for our community. The high scientific activity of students at the Silesian University of Technology and their distinction in the country are promising. However, I have many ideas on how to strengthen this area even further to enable as many people as possible to pursue their passions and, at the same time, to encourage especially talented people to pursue their scientific careers. We are affected

by the lack of young staff and solving this problem will require concrete actions.

The university is people – divided into separate groups, from students to employees who are non-academic teachers. Who is expecting the most significant changes? What effects do we want to achieve?

In the beginning, I would like to reassure you – that changes, which are a process of continuous improvement and a response to changing circumstances, which are the way to the university's success as an organization and the development of individual careers, are necessary. As I wrote in my program, revolutions are dictated by the desire to change, experiment, and introduce chaos.

They do not serve the community. I think we all value stability, and at the same time, we have the ambition for continuous improvement. We want to be proud of the achievements of individuals and the entire university. Reforms must not be at anyone's expense. I want everyone to feel responsible for our Silesian University of Technology and with a sense of this responsibility to conduct tasks that best serve the university. These persons are bold and ambitious but are not a source of excessive stress and are adequate to the possibilities. I plan to stimulate the development of employees, thus creating the comfort of participating in joint work to strengthen the prestige of our university. For this, scientists, educators, and supporting

employees who are not academic teachers are necessary. I want to create opportunities for those who are currently less active.

They do not fully exploit their potential. This work is complemented by doctoral students and students who give meaning to our functioning without considering whom no university reforms can succeed.

**The best businesses are based on good relationships. With whom will the Silesian University of Technology make new or maintain existing relationships?**

I fully agree with this view. Our university must be a beautiful partner in building cooperation relations. For this, we need openness, optimism, but also flexibility. I would like us to take full advantage of the opportunities offered by the university's cooperation in our region and within the European University. Together with the city and regional authorities, we will consistently build a sense of value in society and the economic environment resulting from the functioning of a public

technical academic university in Silesia. We will ensure that the region's inhabitants look proudly at the Silesian University of Technology.

In my program, I indicated that we want our university to participate in the most critical debates about the region's future and the development of innovative technologies and social changes. We will make even better use of the priority research areas and offer local authorities the participation of our experts to solve their fundamental problems, e.g., urbanization, transport, and investment, and to entrepreneurs – our unique competence, reliability, and flexibility. We will increase our involvement in existing national and international alliances and establish new ones, particularly strategic ones, enabling us to build lasting relationships.

**What do you think determines the success of the university?**

First of all, people. Of course, the efficiency of functioning, offer, reliability, flexibility, and dynamism are essential – all this is possible thanks to people, their commitment,

and their sense of responsibility. That is why my motto is: "Our Silesian University of Technology. Let us take care of it together."

**Our readers are wondering what kind of person the Rector Elect is, what he likes, and what he does not tolerate. Professionally and privately.**

I think that so far, by leading many committees, teams, and tasks, I have shown what values I uphold, how I collaborate, discuss, and prove that I like challenges and set bold goals. I have never spoken critically about our university nor tarnished its good name. I want people, and I try to see positive things in them. I treat knowledge, experience, and the desire to acquire them as a foundation. I especially value empathy, balance, prudence, creativity, commitment, reliable performance of duties, and consistent pursuit of the goal, but with respect for values and care for the human person. Progress is facilitated by unconventional thinking. I do not like negative emotions that can harm or hurt someone.

I would very much like us to take care of our Silesian University of Technology together, to reach for bold goals, and to be able to enjoy our successes and the successes of other members of our community because this will make our university even more robust. ■

**I like people, and I try to see positive things in them. I treat knowledge, experience, and the desire to acquire them as a foundation. I especially value empathy, balance, prudence, creativity, commitment, reliable performance of duties, and consistent pursuit of the goal, but with respect for values and care for the human person.**





# DUAL EDUCATION – ELITE STUDIES FOR AMBITIOUS STUDENTS

Text: Jolanta Skwaradowska  
Photos: Jan Szady

“INDUSTRY 4.0: THE WAY TO THE PROFESSIONS OF THE FUTURE” – UNDER THIS SLOGAN, THE EIGHTH CONFERENCE: DUAL EDUCATION – EDUAL TOOK PLACE AT THE SILESIAN UNIVERSITY OF TECHNOLOGY. THE EVENT WAS AN OPPORTUNITY TO DISCUSS AND EXCHANGE EXPERIENCES WITH OTHER UNIVERSITIES AND ENTREPRENEURS PARTICIPATING IN DUAL EDUCATION.



Deputy Minister of Science and Higher Education Prof. Maria Mrówczyńska

**T**he transformation of Upper Silesia from a heavy industry to an advanced technology industry has created a demand for highly qualified personnel and research and development facilities. For years, the Silesian University of Technology has been developing education in cooperation with the Katowice Special Economic Zone and the socio-economic environment.

However, there are questions about how to train specialists for Industry 4.0. How do we prepare staff for the development of innovative technologies? What technical and soft skills should the employees of the professions acquire in the

future? The participants of the eighth edition of the EDUAL – Dual Education – Dual Studies conference sought solutions in response to the needs of Industry 4.0. The event took place at the Education and Congress Centre of the Silesian University of Technology.

– “The EDUAL conference is a good time to summarize the experience and share the good practices that our university and other universities that provide dual education have gained in this area. We want to share our experience because the Silesian University of Technology has its specificity. We operate within the Katowice Special Economic Zone, so

we must cooperate with many companies. We will also be happy to hear what experience other partners have,” – said the Rector of the Silesian University of Technology, Prof. Arkadiusz Mężyk.

The Deputy Minister of Science and Higher Education, Prof. Maria Mrówczyńska, attended the event.

“Dual studies are elitist. They are offered in Silesia, w Poznań, Leszno, and state vocational schools. However, this is not yet a trend that dominates at universities, where we usually have general academic or practical profile studies. The dual form is in the minority, which does not mean it should not develop. On the contrary, such a path of development for universities is excellent, especially now, when we are in the age of demographic decline, and students need to be attracted by an interesting offer.” – emphasized Prof. Mrówczyńska.

The Silesian University of Technology was the first university in Poland to launch dual studies. Students who choose this

form of education already acquire valuable professional experience during their studies, and the program of studies is established jointly with industry representatives.

- "The industry with which the Silesian University of Technology cooperates expects an experienced graduate from us. Employers are looking for specific competencies, and the answer is dual studies. It is also important that every year we modernize the program and add new elements," - said the Dean of the Faculty of Mechanical Engineering, Dr Hab. Eng. Anna Timofiejczuk, Prof. of Silesian University of Technology

At the Silesian University of Technology, dual studies are conducted in the field of Mechanical Engineering and Machine Technology at the Faculty of Mechanical Engineering, where over one hundred people are currently studying, among them Patryk Gołębek, who combines science with work in the automotive industry company. "This is a difficult field of study because I must combine work with learning, which is difficult sometimes. However, it is worth it because it is a more practical profile, and

after graduation, I plan to stay permanently in the company where I currently work" - says the student. - "Watching professionals at work and learning from them is extremely valuable," - adds his colleague Bartosz Adamiec.

Krystian Teister recommends this learning mode and has completed dual studies: "What I did at work was conducted in parallel with what I learned at the university. This learning mode allowed some subjects to be understood much better than if I had only a theory or a few workshops. In addition, I could make new contacts and learn how to function in a team," - said Krystian Teister.

The President of the Katowice Special Economic Zone, which has been cooperating with the Silesian University of Technology in creating dual courses from the very beginning, noted the benefits not only for students but also for businesses.

"Today, no one needs to be convinced that people are the most important thing apart from infrastructure, land, and everything required for investment. We need prepared, highly educated staff, which is happening thanks to dual

studies. This is an elite course of study because the best students choose this mode. On the one hand, they are demanding. Still, on the other hand, they give a fantastic opportunity to a young person who knows from the beginning what he wants to do in life. The employer can gain a good employee," - said the Katowice Special Economic Zone president, Dr Janusz Michałek.

During the conference, participants discussed topics related to dual education and industry needs and the role of soft skills or work-life balance. The lecture on "The evolution of soft skills. The new currency of the future and the foundation of success" was delivered by Dr Małgorzata Dobrowolska, prof. of Silesian University of Technology

- "The lecture was concerned with releasing our potential and developing soft skills. I put such a thesis that this will be the main currency and the foundation of success in the future" - said the scientist.

The conference participants visited laboratories at the university, and there were demonstrations of student science clubs and student works. ■



# THE FORMER STABLES INVITE STUDENTS

Text: Jolanta Skwaradowska  
Photos: Maciej Mutwil

THE STUDENT CREATIVITY CENTRE IN GLIWICE HAS STARTED ITS ACTIVITY. SCC (STUDENT CREATIVITY CENTRE) AND THE INNOVATION AND CREATIVITY SPACE IN KATOWICE MAKE THE STUDENT ACTIVITY CENTRE AT THE SILESIA UNIVERSITY OF TECHNOLOGY.



**E**stablishing the Student Creativity Centre is one of the most important tasks that is conducted within the framework of the Excellence Initiative of the Research University. It aims to create a space for students, doctoral students, and employees to design and develop the competences of the future.

In April, a large-scale consultation with the Centre's users was conducted. – The facility will be open to students and project groups. We want to adjust the Center's functionality to students' needs as much as possible – emphasized Prof. Arkadiusz Mężyk, the Rector of the Silesian University of Technology.

The Student Creativity Centre is in the building of former stables in Akademicka Street. The city took over the facility, which fell into ruin for many years, in 2019. The team of architects under the leadership of the Dean of the Faculty of Architecture, Dr Hab. Eng. Arch. Klaudiusz Fross, Prof. SUT, developed a project to revitalize it. The interior design of the stable was also designed by students who created, among others, the concept of interior lighting, active photovoltaic installation, or a graphic information system in the building. The University received a permit for reconstruction in 2022, while works started in 2023. The

renovated building was commissioned to be used by students in April this year.

“It is a place for individual and group work. Students can implement PBL (Project Based Learning) projects here. Consultations, meetings, debates, and seminars will also take place here. The Centre will be open to pupils of secondary schools,” said Dr Eng. Aneta Grodzicka, Director of the Student Creativity Centre.

Until now, the university has not had a space where many scientific clubs could work together. “The clubs functioned in their departments, and there was no space for joint project activities. So, I hope that the Centre will help stu-

dents develop their creativity,” said Grzegorz Król from the Student Self-Government.

“We are glad that the University provides us a place to work, get to know each other, and integrate. This is an opportunity for innovative solutions and joint projects,” added Julia Nowak from the AI-METH Student Science Club. Jonas Michalik from Silesian Aerospace Technologies emphasizes that modern spaces will be an excellent place to meet business. “We will be able to invite business partners to the Student Creativity Centre and organize presentations or meetings in modern conference rooms,” said the student.

The Student Centre for Creativity will have places for individual and group work. In conference rooms, students can present their projects to investors or show them at an exhibition. In addition to the working rooms, the building



also has an exhibition space and a cinema room.

These are other places where students can develop their interests and pursue projects. Since last year, the Innovation and Creativity Space has been operating in Katowice at Krasińskiego Street. It is a vast hall equipped with the latest technologies, providing students access to unique equipment and allowing them to implement their engineering projects.

The hall's equipment includes, among others, a modern numerically controlled plasma burner, a CNC lathe, an electric lathe, a sys-

tem for scanning and 3D printing, and a set of furnaces for heat treatment, melting, and casting even up to 2200°C. In addition, students have a complete set of presses, power tools, and a chamber for painting and sandblasting. ■

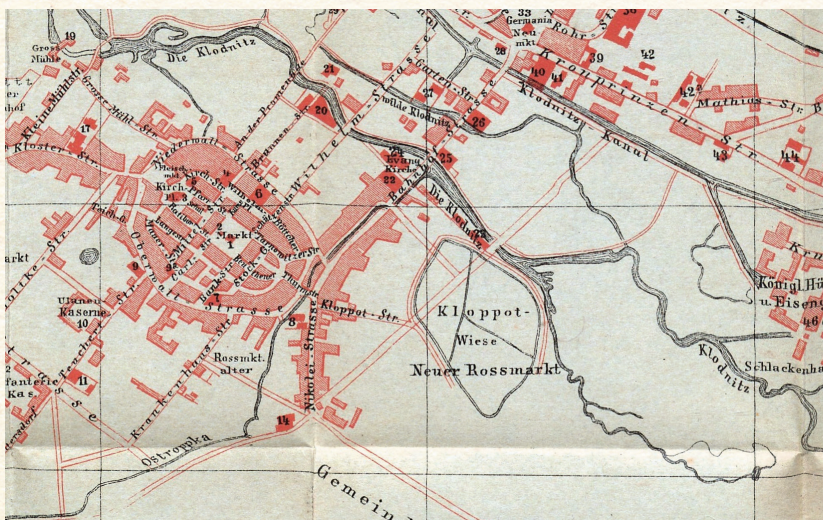


# LIKE PHOENIX FROM THE ASHES

Text: Marek Gabzdyl

Photos and graphic materials: fotopolska.eu, Silesian University of Technology archives

THE CHARACTERISTIC BUILDING IN WHICH THE STUDENT CREATIVITY CENTRE IS CURRENTLY LOCATED HAS SURVIVED DESPITE ALL THE PLANS FOR DEVELOPMENT AND EXPANSION OF THE ACADEMIC CAMPUS, BUILT BY THE SILESIAN UNIVERSITY OF TECHNOLOGY FOR ALMOST 80 YEARS. AFTER A SPECTACULAR REVITALIZATION, NOMINATED IN THE COMPETITION "MODERNIZATION OF THE YEAR & CONSTRUCTION XXI," IT HAS A CHANCE TO BECOME ONE OF THE ARCHITECTURAL SYMBOLS OF THE UNIVERSITY. HOWEVER, THE HISTORY OF THIS PLACE IS MUCH LONGER.



The area of the future Krakow Square on the city plan from 1891. Kłopot Str. - today's Dunikowskiego Street.



Krakowski Square on the city plan from 1902. On the square's edge, stables are visible and marked with brown.

## PLACE

The area in which the Academic District is now located, in the mid-19th century, was a vast pond called Kloppot. The builders of the first post-war buildings of the Silesian University of Technology had to struggle with its remains using pile foundations; currently, the only evidence of the pond's existence is a row of chestnuts once planted on its eastern shore.

On the city plan from 1891, attached to a guide to Gliwice and the surrounding area, the area is no longer marked as a "pond" but as a "meadow" and, at the same time, a "New horse market." "New," to distinguish it from the old one, located at the intersection of today's John Paul II and Nowy Świat streets, had to give way to the Peter and Paul church built in this area.

After drying, the area was gradually built up per the development plan adopted in 1876/77. It was then, under the supervision of Adalbert Kelm, the city's construction councillor from 1891 to 1902, that today's streets were laid out: Wrocławska Street, its extension on the other side of Kłodnica, Strzody Street,

and today's Akademicka Street. Several well-known buildings were created briefly at the intersection of these streets, and they still exist today.

The building of the so-called "stables" appears for the first time on the city plan in 1902. It is difficult to determine the date of construction of this building and its investors. Based on the similarities in architectural style and location, it can be thought that it was part of the buildings of the nearby fire brigade, which were commissioned in October 1898, where horses pulling the first fire trucks were kept. It can be assumed that when horses were replaced by cars, the building began to be used entirely for the needs of traders on Krakowski Square. In the seventies of the 20th century, in the wall stretching to Wrocławska Street, there were remains of those times – metal rings for tying reins.

### SURVIVAL

After 1945, the "stables" building became one of the properties belonging to the Silesian

University of Technology. From the beginning, no future was associated with it, and no future use was planned. None of the plans for the development of the Academic District took it into account. Such a representative place – opposite the Faculty of Mining – was allocated in each of the plans as the location of the main building of the Faculty of Chemistry. The stables were closest to demolition in the early sixties of the 20th century. Then, structures were built between Banacha and Krzywoustego streets by architects Duchowicz and Majerski. These buildings were to be the base of the proper seat of the faculty, designed along the current Akademicka Street and connected by a bridge hung over the current Banacha Street. However, the implementation did not take place. Most probably, the residents of the villa on this street, who were already sitting on their suitcases, were

enjoying it. The "Stables" therefore stayed, and for years – like the barracks standing next to them in the first years of the construction of the Academic District – they served as warehouses, headquarters of organizations, student labour cooperatives, and similar outbuildings, for which there was not enough space in other locations.

### NEW TIMES

When the reconstruction of Akademicka Street started ten years ago, and the barracks from the fifties were demolished, it was known that a low-clinker building would not share the fate of its neighbours. After an impressive reconstruction combining the old with the new, the building performs functions that its designer, from well over a hundred years ago, had not dreamed of. On the map of the Academic District, it has an appropriate, unexpectedly unique place. ■



# A SCIENCE CLUB DRIVES SUPPLY CHAIN

Text: Martin Huć  
Photos: archiwum prywatne

S.K.N. DATA LABS SCIENCE CLUB WAS ESTABLISHED IN FEBRUARY OF THIS YEAR, AND ITS MEMBERS HAVE ALREADY CELEBRATED THEIR FIRST ENORMOUS SUCCESS. MARCIN MAJ AND ANNA WIECZOREK, SECOND-DEGREE BUSINESS ANALYTICS STUDENTS AT THE FACULTY OF ORGANIZATION AND MANAGEMENT, RANKED THIRD IN THE SCIENTIFIC POSTERS' COMPETITION ORGANIZED DURING THE XIV STUDENT MARITIME CONFERENCE.

## (MAINLY) FOR PART-TIME STUDENTS

S.K.N. Data Labs Science Club was founded in February on the initiative of Marcin Maj and Dr

Mariusz Kmiecik, who, together with Dr Adam Sojda, are the Science Club's supervisors.

– We found that the projects we want to implement are differ-

ent from the previous ideas for Science Clubs, which is why we chose the way to create a new organization – says Marcin Maj. – S.K.N. Data Labs Science Club aims to enable students who study part-time and whose professional experience is a great advantage, to engage in scientific activities.

During his first-cycle studies, Marcin Maj served as the chairperson of E.K.L. Feniks. This position allowed him to gather valuable experience that helped him plan further projects, including creating the Club. S.K.N. Data Labs initially consisted of five business analytics students. Now, it has twice the number of people studying at different faculties and universities. However, teachers do not exclude the possibility of enrolling people studying in regular full-time mode.

– The area of our activities is the impact of data analysis and innovative solutions on business phenomena – says Marcin Maj. – We focus on implementing practical projects related to data analysis, allowing us to connect the world of science and business. By creating an interdisci-



Marcin Maj (left), Anna Wiczorek, and Bartosz Rodak represented the Science Club. Data Labs at the XIV Student Maritime Conference in Gdynia.



plinary team, we learn from each other and develop our skills and competences. We value creativity and innovation. We want to realize and develop our passion, i.e., analytics. This field is essential nowadays, and I think it can become a showcase for our university in the future.

– We are young and ambitious, but we still lack the scientific knowledge that the Silesian University of Technology employees have and the experience of people from the business world. We want to bridge these two environments and, using invaluable advice from supervisors and other university employees, support companies in making decisions – says Anna Wiczorek.

#### RESEARCH THAT MAKES A DIFFERENCE

The first success came quickly after almost three months of existence of the Science Club. Marcin Maj and Anna Wiczorek wanted to get a strong start, so they decided to participate in a popular scientific event. They chose the XIV Student Maritime Conference, organized by the TRANSLOG Science Club at the Maritime University of Gdynia. This conference is very well known among students all over Poland. A competition of scientific posters was held there, in which students at the Silesian University of Technology presented an ingenious poster, “Using artificial intelligence in improving the efficiency of supply chain processes.”

– “The works that took part in this year’s edition were related to the topic of the conference “We are... Mega Trends 2030 – Is the T.S.L. sector ready for change?” Our presentation supplemented a graphic

**We create a solution in which companies will receive information that soon a given product will end, such as mineral water on a shelf in a store. As we know, these are unpleasant situations for sellers and consumers. Thanks to our solution, the persons responsible for the order – in the store or the warehouse – will be informed in advance.**

poster presenting the discussed issues” – explain the students.

As the winners point out in their poster, Amazon may be an example of effective use of artificial intelligence in the supply chain, i.e., the process from ordering a product by a customer to its delivery or settlement. The students used publicly available research done by this company in their work. We read in it: “The company’s materials show that thanks to advanced planning and optimization algorithms, the company can optimize the layout of the warehouse, minimize the time needed to manipulate products, and streamline delivery routes, leading to increased efficiency and lower operating costs. According to a study by J. Smith and K. Johnson, the logistics company increased the efficiency of its warehouse processes by 30% after implementing an artificial intelligence-based warehouse management system. By analysing real-time data and optimizing routes, the company could shorten delivery times, reduce losses, and optimize resource utilization.”

– “We also presented the assumptions of scientists from 2018 regarding the forecasts of the development of artificial intelligence and its usefulness,” – says Marcin Maj. “The research

assumed that by 2027, artificial intelligence would be better at driving vehicles than professional drivers. While the work in this direction is ongoing, revolutionary changes are yet to come. We should note that using artificial intelligence already allows companies to improve sales of new products by up to 70%.”

By using Amazon solutions, many companies have improved their business performance. Our students in their work indicate the Bundesliga, the German football league, increased the duration of the client’s session on the website by 17%, Lotte Mart, the South Korean hypermarket, increased the purchase of new products by 70%, or the Calm app for meditation and relaxation increased the daily use time by 3.4%.

– “The work on the presentation and poster often lasted until late at night. We wanted to show the development of artificial intelligence and its use as interestingly as possible,” – says Anna Wiczorek. – “We received invaluable help from the supervisors of our Club, who supported us with experience and knowledge. During the presentation, we wanted to emphasize the impact of artificial intelligence on the implementation of the tasks of enterprises and, at the same time, show that expectations

toward its development have changed over a few years.”

– “This topic will be gaining popularity and is already classified as one of the “megatrends” – comments Marcin Maj. “Third place in the competition is always a pleasant surprise. It is a success for us, but we aim even higher. Considering that it was our debut, it is certainly a good forecast before the next events and projects we plan to implement.”

– “The third place in the Data Labs Science Club is undoubtedly a success. This event gathered a large number of participants. This year, there were over two hundred participants,” says Dr Eng. Mariusz Kmiecik. – “The prepared poster was concerned with the current topic, both from the point of view of science and business. It also provides the opportunity for further exploration.”

S.K.N. Data Labs is not stopping and is already working on another project – a risk assessment

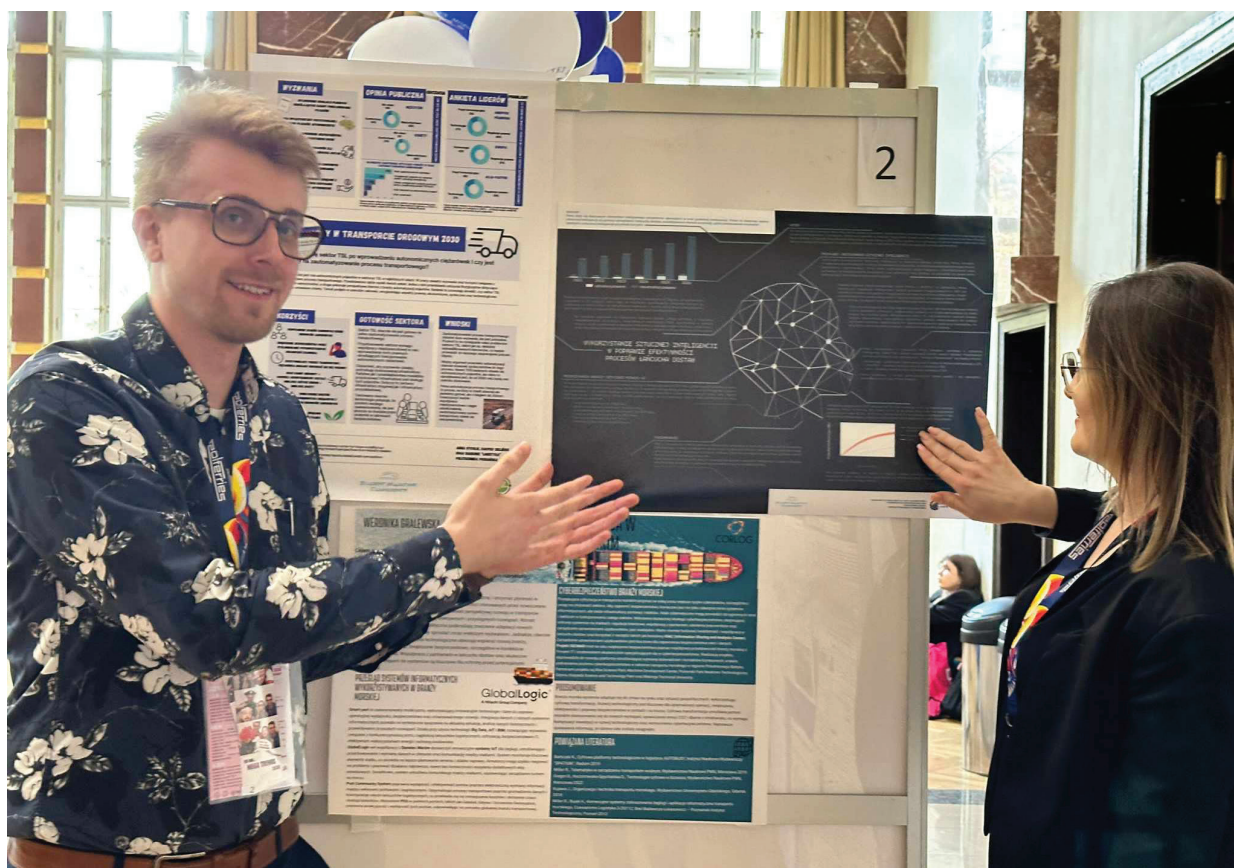
**We are young and ambitious, but we still lack the scientific knowledge that the Silesian University of Technology employees have and the experience of people from the business world. We want to bridge these two environments and, using invaluable advice from supervisors and other university employees, support companies in making decisions.”**

model for supply chain failures.

– “The name of the project is, “S.C.A. – Supply Chain Advisor” – says Marcin Maj. “We are creating a solution in which companies will receive information that soon a given product will become unavailable, such as mineral water on a shelf in a store. As we know, these are unpleasant situations for sellers and consumers. Thanks to our solution, the persons responsible for the order – in the store or the warehouse – will be informed in suitable time that the

product is ending and about the expected time of the shortage.”

“Today’s world places a lot of demands on every industry, which must be met by optimizing the use of resources,” concludes Anna Wieczorek. “The motivation to guarantee the highest quality services to their customers means that companies are looking for increasingly effective solutions. Artificial intelligence is one of the tools that allows us to achieve the desired effect, especially in a world where we operate on such a huge amount of data. ■



# NEW FACES OF ARCHITECTURE

Text: Katarzyna Siwczyk, Martin Huć  
Photos: Maciej Mutwil

THE ARCHITECTURE WEEK IN THE EUROPEAN CITY OF SCIENCE KATOWICE 2024, CURATED BY SCIENTISTS FROM THE SILESIAN UNIVERSITY OF TECHNOLOGY - DR HAB. ENG. ARCH. KLAUDIUSZ FROSS, PROF. SUT, DEAN OF THE FACULTY OF ARCHITECTURE OF THE SILESIAN UNIVERSITY OF TECHNOLOGY, AND DR KRZYSZTOF GROŃ, VICE-DEAN OF THIS FACULTY. AS PART OF THE EVENTS, DESIGNER BENCHES WERE UNVEILED IN SEVERAL REGIONAL PLACES.

**T**he Architecture Week started with exhibitions. In the building of the Faculty of Architecture of the Silesian University of Technology in Gliwice, the exhibition “Top 12 – My first project” was presented, during which original projects were presented by students of this faculty, who for the first time could show their skills in front of a wider audience. There were more such initiatives during the Architecture Week.

– We gave the young people a chance to show their sensitivity and creativity – said the organizers from the Faculty of Architecture of the Silesian University of Technology, who also invited representatives of the Academy of Physical Education in Katowice to participate in joint activities. The dance team of this university appeared on the square in front of the Silesian Theatre and presented a show of Latin American dance classic – cha-cha.

The occasion was an International Dance Day.

– In addition to the fact that a group of over thirty students of the Katowice AWF (Academy of Physical Education) danced, we also invited all interested. We gathered at the Katowice Market Square to learn the basic steps of this dance. Many people joined, including the elderly, which makes us happy – said Martyna Smusz, a cha-cha instructor. The dance in the heart of Katowice proved that we could use the archi-



ture of the place not only for living but also for creating artistic events.

The architectural walk called “Architecture of Science” is also enjoyed by the residents through the Youth Palace in



Katowice, led by Dr Arch. Jacek Kamiński from the Silesian Library and Adam Lasek, director of the Youth Palace. The two-hour event brought together many interested parties. The guides faced a challenge because the well-known place hid numerous secrets, and thus, the visitors had a lot of questions.

– “We wanted to show how many secrets the Youth Palace hides - said Adam Lasek. - We conduct a large number of walking tours like this for foreign groups during the year, so we already have some experience with it. This time, Dr Arch. Jacek Kamiński also presented interesting facts about the architecture of the rooms of the Youth Palace. In the end, we also presented the participants with a display of

lighting and technical capabilities of our theatre room” – he added.

Like walking, social games are also wonderful ways to spend time in urban space. As part of Architecture Week, the or-

ganizers invited residents to participate in the game “To be open to oneself,” prepared by the Open Circle Foundation and Dottka company. The most essential things in this game were conversations and emotions, and collecting points was relegated to the background.

– “The game allows one to understand and get to know the other participants easily. It is trendy among blind people who can play it using the smartphone app and QR codes used in the game,” – explained Małgorzata Pękala, the game designer.

Many attractions during the Architecture Week were also waiting for visitors to the Silesian University of Technology on Tuesday, April 30. In the Faculty of Architecture build-

ing, a space architecture seminar was held.

– “We wanted to tell you what is not obvious regarding the Faculty of Architecture activity. In addition to traditional fields of study, we also deal with innovative projects such as designing space habitats and participating in simulated missions. Some could say that this is not an important topic, but many companies around us already deal with it. Hence, the need to develop this field of study is huge,” - said Professor Klaudiusz Fros during a meeting with students and secondary school pupils.

PhD student Wiktoria Dziaduła also talked about her development path, from her studies at the Faculty of Architecture to participation in international space projects in the United States.

“I encourage young people still facing the choice of their career path to become inter-



ested in architecture, particularly space architecture. It all starts with passion, and what we design for space missions in the future can still be used here on Earth.”

However, space architecture did not dominate the discussions during Architecture Week because, on a long weekend in May, the organizers again went out to meet the inhabitants of the Silesia region and, walking the urban paths, invited them to rest in the space of big cities. The opportunity was to create new benches as part of the Bench-Man project.

“It started with the covers on the benches. We wanted to revive benches that no one



used. A man-styled character, a little robot, attracts, arouses interest, even sympathy, and encourages to relax in this place. We can see that this design works,” said Prof. Klaudiusz Fross, one of the project’s authors.

New benches under this project were unveiled, among others, at the Silesian Library in Katowice and Cieszyn. It doesn’t end there.

“The project is evolving. Benches are numbered; they have already appeared in many cities in the province and throughout Poland. There will certainly be more,” – said Dr Krzysztof Groń, curator of the Architecture Week.

– “We wanted these benches to be something that would remind us of this event after the end of the Architecture Week. The week and various events pass, and these benches will remain forever. Residents of the cities where they are located, and guests can use them to take souvenir photos. As promoters of good architectural design in urban space, we are glad we could make them. This project

is unique and looks great,” – added Dean Klaudiusz Fros.

The finale of the Architecture Week was an artistic and photographic performance on the Katowice market. Three students of the Faculty of Architecture – Julia Wybraniec, Jędrzej Caputa, and Wojciech Kramza – spread the inscription “Katowice City of Science 2024, Architecture Week” in front of the Silesian Theatre and distributed leaflets promoting the event and the faculty itself.

– “The aim was not only to capture this moment in photographs but also to promote Katowice as a city focused on the development of science and education” – concluded Dr Krzysztof Groń. ■

The event was funded by the EU. The views and opinions expressed are solely those of the author(s) and do not necessarily reflect the views and opinions of the European Union or the European Research Executive Agency (REA). The European Union and the REA are not responsible for them.

The event was also co-financed by the Silesian Voivodeship – Co-organizer of the European City of Science Katowice 2024.



# "DĄBROWIACY" CELEBRATED THEIR 50<sup>TH</sup> BIRTHDAY

Text: Anna Świdarska  
Photos: Przemysław Bratkowski

**W**ith a vibrant tapestry of colours and elements, and an electric atmosphere both on stage and in the audience, "Dąbrowiaczy" marked its 50th anniversary with a grand gala concert. The audience, deeply moved by the performance of the most exquisite folk dances and songs from

various regions of Poland, expressed their appreciation with resounding enthusiasm.

The concert began with thanks for half a century of presenting national culture and tradition at a high artistic level.

"It is a moment of immense pride and joy to commemorate

these 50 years, which for some, may seem like a single day," expressed Prof. Arkadiusz Mężyk, the Rector of the Silesian University of Technology, as he congratulated "Dąbrowiaczy" on their remarkable journey. "You have not only co-created the tradition and history of our esteemed university but have also become its symbol. It is impossible to envision any celebration or event without "Dąbrowiaczy." You are the finest ambassadors of our university," the Rector added, expressing his gratitude to the team for their unwavering support over the years.

"I am happy to be able to take part in such an excellent ceremony, and I assure you that in the coming years, we will support you. You will be proud of the Silesian University of Technology. Still, we will also ask you for help, as it has been so far," added Prof. Marek Pawełczyk, Vice-Rector for Science and Development, Rector-Elect of the Silesian University of Technology.

The Academic Dance Ensemble of the Silesian University of Technology "Dąbrowiaczy" debuted in 1974 during juvenalia in the Silesian University of Technology branch in Dąbrowa Górnicza. After only a handful of months of rehearsals, fifty people performed on stage, presenting songs and dances from





the Zagłębie and Silesia region. The conditions were modest, costumes borrowed from other ensembles or sewn by the artists' mothers at night. The Ensemble grew, thanks to the work and passion for the folk art of choreographer Paweł Barcz. The Ensemble had already numbered over one hundred people in a brief time. It acquired new costumes and presented repertoire from other regions of Poland. The gala concert of "Dąbrowiaczy" began with a suite of Rzeszów dances. They also offered a lively repertoire of songs and dances from the

Lublin area, and a group of "old boys" demonstrated their skills and fitness by performing a Kujawy suite. Slightly younger artists, in multi-coloured costumes made of densely woven wool, presented a fitness and vocally demanding choreographic arrangement composed of dances and songs of Opoczno. The vocal group Zora, which grew out of the youth section and was created by the daughters of team marriages, also performed. The artists were delighted with the performance of multi-vocal a cappella songs.

When celebrating the 50th birth-

day (it is defined in Silesia as Abraham) – a student group and old boys jointly performed a Silesian suite.

The jubilee of "Dąbrowiaczy" was also a poignant moment to acknowledge the exceptional individuals who have significantly shaped the team. Rafał Dudek, a masterful instrumentalist, trumpeter, and pedagogue; Andrzej Zaczkowski, the leader of a folk band playing the accordion for 40 years, who also discovered his vocal talent during the concert; and Leszek Chołuj, the long-time leader of the band since 1980, were bestowed with well-deserved awards. Their unwavering dedication and exceptional talent have been pivotal in shaping the ensemble's success, and their recognition was a testament to their invaluable contributions.

The multi-generational audience rewarded the artists with a standing ovation. Dąbrowiaczy, whose artistic level is comparable to professional bands, were invited to perform during the Beskids Culture Week, a prestigious folk-art festival. ■



# THE FAMILY OF THE "DĄBROWIACY" FOR BETTER AND FOR WORSE

*Text: Katarzyna Siwczyk  
Photos: Jan Szady*

IT WAS MAY 1974. THE STUDENTS' ANNUAL FESTIVAL - JUVENALIA, WAS IN PROGRESS. YOUNG, TALENTED DANCERS AND SINGERS APPEARED ON THE STAGE TO PERFORM IN FRONT OF THEIR COLLEAGUES. THIS EVENT WAS THE DEBUT OF THE ACADEMIC DANCE ENSEMBLE OF THE SILESIA UNIVERSITY OF TECHNOLOGY "DĄBROWIACY." THE DEBUT CAME AFTER A FEW MONTHS OF PREPARATIONS BECAUSE THE FIRST MEETINGS OF THE GROUP OF DANCERS BEGAN IN NOVEMBER 1973. HOW WOULD STUDENTS REACT TODAY TO THE GROUP'S PERFORMANCE PROMOTING FOLK CULTURE AND FOLKLORE? WE DO NOT KNOW, BUT THE ENSEMBLE STILL EXISTS AND IS DOING WELL DESPITE THE PASSAGE OF YEARS AND CHANGING TRENDS.

**W**e are observing a recurring fashion for folklore – says Barbara Lisiecka, acting head of "Dąbrowiaczy." The young staff, who heads the polytechnical folklore group, debunks harmful myths about folk culture. – There was a time when it was associated with kitsch, but it is over. I am proud of this. In the ensemble, we show the best version of our traditions, culture, dances, and songs, and we are all convinced that this has immense value and quality – adds Barbara Lisiecka.

The ensemble survived various storms—historical, political, ideological, and, more recently, pandemic. – In addition to the pandemic, the team also survived three removals of the entire property, that is, over fifty cabinets, costumes, three pianos, two double basses, an entire office full of documents, and even a lack of space for

practice – says Barbara Lisiecka. We met with the group members on the eve of their jubilee concert on the 50th anniversary of their activity, which took place on Saturday, May 18, at the Mrowisko Student Culture Centre.

## AS IN THE FAMILY

"We have returned to rehearsals, although we are not actively part of the team daily. But we could not miss it on this momentous day. The rehearsals are an important part of our life," – admitted Lidia Szuścik.

"We are a typical team couple. We met in the ensemble, fell in love there, and got married too," – added Bogdan Szuścik, Lidia's husband. "Today is the 38th anniversary of the wedding," he said with a tear in his eye.

It was a significant day not only for Lydia and Bogdan but also for the whole ensemble. On







the wedding day, “Dąbrowiacy” accompanied all couples who met in the ensemble and prepared a unique setting. – The husband wore traditional Polish clothes that day, and bridesmaids and friends were dressed in costumes from the Duchy of Warsaw. They looked beautiful; Lidia recalled.

“My wife didn’t have a folk costume, but her dress was also unique. We bought it during an ensemble trip to Türkiye in 1986. There were no showrooms with wedding dresses in Poland then, so we went abroad to find something. Contrary to superstition, during this trip, I went to the shops with my future wife, and she tried on various dresses. Finally, we chose the first one that caught our eye,” recalls Bogdan.

The couple has two children, a son and a daughter, who also danced in the ensemble during their childhood and college years. The daughter was even a singing and traditional dance instructor for a while.

“The children traveled with us. We took them to rehearsals. Among the families of “Dąbrowiacy,” there were such wonderful relations that we also went on holiday with the whole group, spent time together outside rehearsals, and created a kind of commune,” – recalls Lidia.

– “To this day, we go to our wedding celebrations, we support each other. We feel like we are in the group as if we are in a family,” added Barbara Lisiecka.

“Some in this family play the role of aunts and uncles. In my case, my uncle will soon turn into a grandfather. I am already at this age when the band’s youngest members want to address me as a Mister, and I am sad that time is running out. Soon, we will be replaced by a new generation,” – adds with nostalgia Andrzej Zaczkowski – the band’s manager and accompanist.

### THE DOOR TO A BETTER WORLD

Andrzej Zaczkowski has been associated with “Dąbrowiacy” for forty years. He has spent his entire adult life with the team. After graduating from music school, he became an accordion player in the group music band, and so, to this day, he is the core of the band’s musical part.

“It was a time when there were no phones or computers. I received the message that I could join the band on January 1, 1985. To this day, I have this yellowed letter in a drawer,” – recalls the musician with a smile. – “In those days, it was a huge promotion and a chance to go somewhere” – he adds.

For his first trip with the ensemble, he went to Prague, Czechoslovakia. The joy of the musicians and band members on the trips was all the greater because they received delegations paid in dollars or currency books, which allowed them to earn money and, at the same time, opened the possibility of shopping on the spot. There were empty shelves in Poland, while there was a different reality abroad.



“When I joined the group, I didn’t know there would be an opportunity to go anywhere. That happened later. My first trip was to the Soviet Union – Novosibirsk and Moscow. “It was 1980,” Lidia recalled.

Martial law was introduced in Poland in 1981. The dream of going on any trip was only a dream. The “Dąbrowiaczy” were lucky; a year later, they left for Italy.

– “We took part in the audience with John Paul II. We sang for him, “God, save Poland.” Imagine how important it was for us to be there at such a moment, in such circumstances” – recalls Lidia.

Each trip, “Dabrowiaczy,” brought many memories and

new acquaintances. Some of them still last to this day.

– “Our children met Chinese girls during one of these trips, who even visited us in Poland, and then we visited them in Hong Kong,” – recalls Bogdan and adds that nothing built relationships like feasting and dancing together. They have broken down all language and communication barriers.

#### WAY OF LIFE

Dancing is just a way of life. “Few men can dance,” Bogdan said, admitting that this skill was beneficial. – “I would encourage you to learn to dance because I had to dance with female decision-makers, and thanks to the fact

that I managed to do it somehow, I came out well,” – recalls the dancer.

Leszek Dulak also admitted this, joining the band together with his colleagues in 1993, among other things, to meet the girls.

– “When I was studying, only men were at the Faculty of Civil Engineering. We decided to go to the rehearsal with our colleagues to get to know the fair sex in the band. It turned out that there were more girls, so they had to try harder to join the team. There were fewer men and staff shortages, so we joked that even those with lame legs would be suitable for dancing if they showed willingness,” recalls Leszek.

After a ten-year break, he returned to the band to dance at a jubilee concert.



– “It is out of longing for folklore, music, and dance. We could not forget it. I thought it would be difficult for me to join again, but I quickly made up, and I am delighted that I will dance again in two sets,” – added Leszek Dulak.

### THE NEW GENERATION

In addition to real veterans, representatives of the so-called new generation also form the team. Among them is Julka Wróbel.

– “I came to the rehearsal at the Employees’ Club, to the room with a beautiful parquet floor, which made a nice impression. The ensemble greeted me very kindly,” says Julia, adding that she suffered a crisis after a few days in the

group. “We usually have more difficult rehearsals on Thursdays, and I had enough after the first such Thursday. The next day, I barely got out of bed. I had acidosis, but in the end, I survived, and I’m in the group for the third year.”

Julia is a student. During rehearsals, she meets with Silesian University of Technology graduates, current employees, and pensioners. They stand shoulder to shoulder on one floor above the divisions and form a harmonious whole.

The team’s leadership hopes that the new generation will also believe in the meaning of folklore.

“I believed in it, but the beginning was not encouraging. When I entered the rehearsal

room, there were grandma’s curtains hanging on the windows, some old mirrors on the walls, and tablets written in Cyrillic, but that was nothing because there were many people around who danced beautifully. It influenced my decision to join this ensemble,” recalls Barbara Lisiecka.

The wishes are apparent after half a century of activity – stay with us a hundred years!

“I wish it were not only a hundred but the whole eternity. As long as a world exists, as long as we live in a free country, let us cultivate folklore because these are our roots, which must be taken care of and passed on to the next generations.” – said Andrzej. ■

# EVENTS

## MINISTER DARIUSZ WIECZOREK VISITED THE SILESIA UNIVERSITY OF TECHNOLOGY.

Dariusz Wiczorek, Minister of Science and Higher Education, visited the Silesian University of Technology and participated in a meeting with the university's authorities and the directors of academic libraries on May 7 at the Silesian University of Technology Library.

Minister Dariusz Wiczorek was welcomed by Prof. Arkadiusz Mężyk, Rector of the Silesian University of Technology, and Dr Hab. Renata Frączek, Director of the Library. Minister had the opportunity to visit the new interior of the Library— which is before the final stage of finishing after a thorough reconstruction— and see the valuable collections presented in the exhibition “Our Beginnings,” prepared as part of the Book Week, as well as talk with the participants about the challenges in the higher education sector and development prospects. ■



photo Martin Huć

## VISIT OF REPRESENTATIVES OF EMIRATI UNIVERSITIES AT THE SILESIA UNIVERSITY OF TECHNOLOGY

Representatives of Emirati universities visited the Silesian University of Technology—Prof. Ghalib Ali Alhadrami Albreiki and Dr Eissa Al Rumaithi from UAE

University and Prof. Dr Ebrahim Alhajri from Khalifa University, accompanied by Karina Iwan from the Marshal's Office in Katowice. Guests at our University were welcomed by Prof. Dr Hab. Marek Pawełczyk, Vice-Rector for Science and Development and Prof. Dr Hab. Anna Chrobok, director of the College of Studies of the Silesian University of Technology.

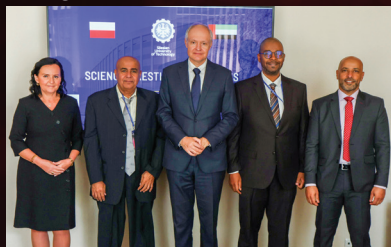


photo Martin Huć

The guests expressed interest in the priority research areas implemented at the Silesian University of Technology, which emphasized the dynamic cooperation with industry. The lively discussion also concerned how project-oriented education is organized at the university. In summary, the professors expressed their admiration for the dynamic development of our university in recent years, emphasizing its considerable progress and achievements. ■

## A NEW MASTER'S DEGREE COURSE WITHIN EURECA-PRO

Three partner universities of the EURECA-PRO Consortium, The University of Leoben in Austria, the Technical University of the Mining Academy in Freiberg in Germany, and the University of Leon in Spain, invite candidates to start a new master's degree

in responsible consumption and production.

As part of this pioneering master's program, students learn about the latest global trends and challenges related to sustainable development in responsible consumption and production, consistent with 12—the UN Sustainable Development Goal (Sustainable Production and Consumption). ■

## THE SILESIA UNIVERSITY OF TECHNOLOGY HOSTED YOUNG POLISH ACADEMY OF SCIENCES SCIENTISTS.

On 18-19 April, at the Silesian University of Technology, the General Meeting of the Members of the Academy of Young Scholars of the Polish Academy of Sciences was held. The session of the Academy of Young Scholars in the Senate Hall was opened by Prof. Marek Pawełczyk, Vice-Rector for Science and Development, and Maciej Sałaga, President of the Academy of Young Scholars of the Polish Academy of Sciences.



photo Jan Szady

The representation of the Academy of Young Scholars also met with the Rector of the Silesian University of Technology, the chairman of CRASP – Prof. Arka-

dysz Mężyk, and the President of the Polish Academy of Sciences – Prof. Marek Konarzewski. The Silesian University of Technology in the Academy of Young Scholars is represented daily by Dr Hab. Eng. Andrzej Katunin, Prof. SUT, Vice President of AMU (Academy of Young Scholars). ■

### THE CEREMONY OF HANDING OVER THE POWER GENERATOR TO THE LVIV POLYTECHNIC NATIONAL UNIVERSITY

At the Faculty of Civil Engineering of the Silesian University of Technology, a ceremony took place to hand over the power generator to the Lviv University of Technology. The authorities of our university attended the event – Rector Prof. Arkadiusz Mężyk and Prof. Marek Pawełczyk, Vice-Rector for Science and Development.

photo Maciej Mutwil

Marelli donated the generator set. The device supports Lviv University under challenging times, during which Ukraine found itself. ■

### THE FACULTY OF ELECTRICAL ENGINEERING BOASTS A EUROPEAN PERSPECTIVE OF DEVELOPMENT FOR YOUNG PEOPLE.

The Faculty of Electrical Engineering of the Silesian University of Technology is an excellent place to study – pupils of secondary schools were convinced about it during workshops and meetings with scientists of this Faculty. The event took place on April 23 as part of the City-Region-Academy project and is part of the European City of Science Katowice 2024 celebrations.

Young people learned about energy and electricity industry development perspectives by participating in lectures and workshops, which covered topics

such as electric and electronic vehicles, machines, and measuring systems. Pupils also visited laboratories equipped with modern equipment, where classes are held daily.

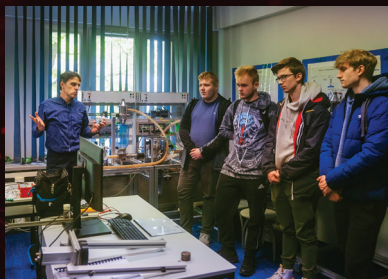


photo Tomasz Stokłosa

The EU finances the event. The views and opinions expressed are solely those of the author(s) and do not necessarily reflect those of the European Union or the European Research Executive Agency (REA). The European Union and the REA are not responsible for them.

The Silesian Voivodeship - Co-organizer of the European City of Science Katowice 2024 co-financed the event. ■

### VISIT OF FUJITSU REPRESENTATIVES AT SILESIA UNIVERSITY OF TECHNOLOGY

In April 2024, Fujitsu representatives visited the Silesian University of Technology. The visit's aim was, among other things, to discuss cooperation in innovative activities related to implementing the assumptions of the World Sustainable Development Agenda 2030.



photo Maciej Mutwil

Fujitsu is one of the world leaders in digital technology development, covering all application levels, from embedded technologies to the highest level of com-

puting and artificial intelligence solutions. ■

### FROM COAL TO ATOM – WORKSHOPS AT THE SILESIA UNIVERSITY OF TECHNOLOGY

As part of the DEsire project conducted at the Faculty of Energy and Environmental Engineering, the aim of which is to develop a Polish plan for the decarbonization of energy, a seminar, and workshops on issues related to the Coal-to-Nuclear path were held at the Centre for New Technologies of the Silesian University of Technology.

More than ninety experts representing energy groups, technology providers, industry, regulators, and the social side participated in the seminar "Technical issues of the Coal-to-Nuclear Decarbonization Pathway." The participants discussed the domestic coal energy industry, also pointing out its importance in the context of energy security. ■



photo Jakub Ochman

### CORROSION AWARENESS DAY AT THE SILESIA UNIVERSITY OF TECHNOLOGY

On April 24, we celebrated Corrosion Awareness Day at the Silesian University of Technology for the second time.

This holiday was established in 2010 by the World Corrosion Organization (WCO). It aims to draw attention to the dangers and problems resulting from the corrosion of materials and the massive losses that this phenomenon absorbs.

The event took place at the Faculty of Chemistry. The organizers prepared a lecture, a demonstration of chemical experiments, and the finals of the photographic and artistic competition. ■



photo Maciej Mutwil

### WE KNOW THE COMPETITION WINNER WAS "FOR THE GOLDEN INDEX OF THE SILESIA UNIVERSITY OF TECHNOLOGY."

We know the winners of the eighth edition of the competition "For the Golden Index of the Silesian University of Technology." The event is addressed to pupils of secondary schools, and its goal is to develop young people's interest in knowledge from selected areas and fields and to promote exceptionally talented pupils. The main prize for the first-degree winners is placed in all fields of study at the Silesian University of Technology, and preferential points are placed in recruitment proceedings for the second and third-degree winners.

Like the previous one, this year's competition edition was nationwide. In addition to pupils from schools in the Silesian Voivodeship, the winners included pupils from Poznań, Andrychów, Rzeszów, Mielec, Oleśnica, Wieluń, Krosno, Nowy Targ and Nowy Sącz. ■



photo Martin Huć

### THE SILESIA UNIVERSITY OF TECHNOLOGY RECTOR SAID GOODBYE TO THE ACADEMIC SECONDARY COMPREHENSIVE SCHOOL GRADUATES.

The Academic Secondary Comprehensive Schools of the Silesian University of Technology in Rybnik and Gliwice said goodbye to their pupils who finished their education in these schools. The ceremony of handing out certificates to this year's secondary school graduates in Gliwice was attended by the Rector of the Silesian University of Technology, Prof. Arkadiusz Mężyk i Vice-Rector for General Affairs – Prof. Bogusław Łazarz.



photo Tomasz Stokłosa

– Of course, we invite graduates to continue their education within the walls of the Silesian University of Technology – said the Rector of the Silesian University of Technology, Prof. Arkadiusz Mężyk, and emphasized that our university offers many opportunities for young people to develop. ■

### POPULARIZATION AND COMMUNICATION OF SCIENCE IN POLAND – WORKSHOPS

Popularization and communication of science are multidimensional areas, which consist of issues related to, among others, cooperation with the media, institutional support, the possibility of education, popularization activities, and engaging recipients in them.

The need to discuss the issues together resulted in the workshop "Popularization and communica-

tion of science in Poland," which took place at the Silesian University of Technology with the participation of representatives of universities, scientific institutes, promotion offices, science centres, companies, and business from all over Poland. ■

### KOSMOTREND – NATURAL COSMETIC RAW MATERIALS

The integration of scientists and representatives of the cosmetic industry, as well as the latest trends and challenges related to using natural ingredients in cosmetics, is why the Faculty of Chemistry invites you to the 1st National Scientific Conference "Kosmotrend – natural cosmetic raw materials."

The conference will take place on September 6 at the Education and Congress Centre of the Silesian University of Technology in Gliwice. Registration is open until June 3, 2024, via the registration form: [www.chemia.polsl.pl/kosmotrend/index.php/rejestracja/](http://www.chemia.polsl.pl/kosmotrend/index.php/rejestracja/) ■

### EAEIE CONFERENCE 2024

We invite you to participate in the international didactic conference "EAEIE 2024 – 33rd Annual Conference of the European Association for Education in Electrical and Information Engineering", which will take place on September 24-26-27, 2024, at the Education and Congress Centre of the Silesian University of Technology.

The conference aims to bring lecturers, researchers, and specialists from Europe and beyond to exchange ideas and information and contribute to developing electrical engineering, computer science, and mechanical engineering education. This year's theme will be "Education for Industry."

### WE SET OUT FOR KNOWLEDGE. "RUN FOR KNOWLEDGE WITH RUN PAN VOL. 2".

Behind us is the second edition of the famous science lecture „Run for knowledge with RUN PAN,” which occurred at the Students’ Cultural Centre “Mrowisko” in Gliwice. Young people from secondary schools came to the Silesian University of Technology. They ran for knowledge with scientists of The Council for the Promotion of the Public Understanding of Science of the Polish Academy of Sciences, who conducted lectures. ■

### ART AT THE X GALLERY

Gallery X at the Faculty of Architecture of the Silesian University of Technology held the exhibition’s opening on World Art Day, established by UNESCO. Visitors could see as many as 144 works by artists from all over the world. There were works of, among others, Prof. Klaudiusz Fross, Dr Krzysztof Gron, Vice-Dean for Cooperation and Development, and Dr Hab. Eng. Arch. Krzysztof Rostański, Prof. of Silesian University of Technology. ■

### XI DRONIADA IS RICH IN EVENTS.

The eleventh edition of Droniada will last as many as seven

days this year. It will take place on 3-9 June in the Silesian Park in Chorzów and at the Faculty of Transport and Aviation Engineering of the Silesian University of Technology in Katowice. This year, there are a lot of attractions waiting for participants. For the second time, an essential element of this event will be the conference “Droniada Tech by Silesian University of Technology” under the slogan “Robotic mobility,” which will take place on June 3 and 4 in the conference room at the Silesian Stadium. ■

### CONFERENCE OF THE ASSOCIATION OF PR AND PROMOTION OF POLISH UNIVERSITIES “PROM”

From 2 to June 5, 2024, the XXXVI Conference of the Association of PR and Promotion of Polish Universities “Prom” will occur at the Silesian University of Technology. The event is a platform for exchanging experiences and knowledge and an excellent opportunity to build relationships and cooperation between representatives of the academic world and practitioners in public relations, promotion, and communication.

This year’s theme: “Trends. Technology. Tactics. Talks on Communication in the European City of

Science Katowice,” will determine the prospects and direction of plenary discussions, discussion panels, and activities focused on case studies.

### FREE ACCESS TO THE SUBSCRIPTION OF “PULS BIZNESU”

Thanks to the cooperation with “Puls Biznesu,” our university employees and students have free access to the premium content of the Puls Biznesu daily with the latest business information and more! To use the free subscription, you must register at [www.pb.pl/subskrypcja/uczelnie/polsl](http://www.pb.pl/subskrypcja/uczelnie/polsl) ■

### THE DISAPPEARING WALLS - LIMESTONE. EXHIBITION BY JANUSZ LECH WOJCIESZAK

The limestone outposts growing along the Jurassic trails and the limestone structures became the hallmark of the Kraków-Częstochowa Jury. They can be found in photographs by Janusz Lech Wojcieszak. The exhibition “Disappearing Walls – limestone” opened on April 19 at the Centre of New Technologies of the Silesian University of Technology as part of the SUBLIME project summary. ■

# PROJECTS

### THE SILESIAN UNIVERSITY OF TECHNOLOGY PROJECT WILL RECEIVE A GRANT FROM THE HORIZON EUROPE PROGRAM.

An important distinction for the Silesian University of Technology. The project prepared by our scientists: “Towards an Un-

derstanding of Artificial Intelligence via a Transparent, open and Explainable Perspective,” was recommended for funding under the competition entitled “The Marie Skłodowska-Curie actions Doctoral Networks (MSCA DN) 2023”.

The European Union’s Horizon Europe Framework Program will fund the project. It is the most extensive program in the history of the EU to support research and innovation. This endeavour is not the only distinction for scientists of the Silesian Univer-

sity of Technology. The project „Computational and Experimental Enzyme Engineering for New Polymers“ was also appreciated, and our university will function as a partner. ■

### PROJECT WITH EU FUNDING

The Silesian University of Technology is implementing a project that received funding for PLN 3 162 226.28 from the European Union – “Modern methods of monitoring the level and isotopic composition of atmospheric CO<sub>2</sub>” and is part of the Territorial Plan of Just Transformation of the Silesian Voivodeship 2030. The total value of the project is PLN 3 513 584.76 ■

### WE INVITE YOU TO THE UNIQUE EURECA-PRO EXHIBITION.

The consortium of European universities EURECA-PRO with the Silesian University of Technology invites you to participate in an unusual, interactive exhibition under the motto “Transversal responses: Filling the Gaps,” which will take place from May 24 to June 5, 2024. The exhibition summarizes the EURECA-PRO project on sustainable development, led by Montanuniversität Leoben from Austria. More on [www.erecapro.eu/transversal-responses-filling-the-gaps](http://www.erecapro.eu/transversal-responses-filling-the-gaps) ■

### THE SILESIA UNIVERSITY OF TECHNOLOGY JOINED THE BALTIC UNIVERSITY PROGRAM.

The Silesian University of Technology joins the Baltic University Program (BUP) consortium. It is an international network of about one hundred universities, located in ten countries of the Baltic Sea Region, established in 1991. BUP supports cooperation between scientists, teachers, and students from participating universities in numerous events, competitions, and programs, such as “Training for PhD students CAPABLE 2024” or “BUP PhD Award.” ■

### THE JAMES DYSON AWARD COMPETITION IS OPEN.

The new edition of the international James Dyson Award competition is underway for engineering students. The global winner and the winning project in the Sustainable Development category will win a prize of PLN 151 400 this year for the development of their inventions. However, PLN 25 200 will be given to each national winner in all thirty markets where the competition occurs.

Open to all students and recent graduates in engineering and design, the competition aims to select ambitious projects that address global issues—from cancer diagnosis to natural disas-

ters. The call will last until July 17, 2024. ■

### THE ASIA-PACIFIC SUMMER PROGRAM

Daffodil International University (DIU) in Bangladesh, in collaboration with the Association of Asian and Pacific Universities (AUAP), invites students from all over the world to participate in the Asia-Pacific Summer Program (AASP) 2024. The meeting will be held on 20-28 July 2024.

Participants can choose and study any Social Business, Ethical Hacking Concept, and Mobile Journalism course. More information and registration can be found at [www.daffodilvarsity.edu.bd](http://www.daffodilvarsity.edu.bd). ■

### EURO SCIENCE OPEN FORUM 2024

We invite you to participate in the 11th edition of The EuroScience Open Forum. ESOF2024 is one of the most important international conferences, impacting the transformation of science and the world. During the conference, scientists, entrepreneurs, politicians, journalists, and residents will talk about the latest achievements in various fields of science and art and their impact on society.

Participation in the event is free—more information is available at [www.esof.eu/pl](http://www.esof.eu/pl). ■





# THE VOICE OF THE STUDENT COUNCIL

## GAMES ARE BACK ON CAMPUS!

On 3-8 June 2024, Juvenalia Gliwice (IGRY) will return. After a 7-year break this year, we are moving to the Igrý Meadow. The Board has worked continuously throughout the year to make every effort to prepare this year's IGRY.

IGRY is a student holiday that will last six days this year. Students and the academic community await various attractions to spice up the IGRY week.

On Monday, we will start with a stand-up performance at the Mrowisko Student Culture Centre, and then we move to the Spiral Student Club for a jam session. Tuesday, as every year, is a day for the city – the City Game,

which is already a tradition of the IGRY Week, and board games for all fans of this entertainment. Wednesday is a day to gather energy; a film evening and a barbecue on the IGRY meadow will be held under the open sky. On Thursday, a Belgian dance at the marketplace will start handing students the keys to the city, and then we will set off in a procession through the town straight to concerts. Besides traditional concerts, the Board planned a cruise on Dzierżno Lake on Friday. This year, we will hear stars like Trill PEM, Meek, Oh Why? Tymek, Otsochodzi, Lej Mj Pót, Bez Pokory, Wilki, Organek, and two winning bands of the final of the Student Band Review! At the end of the game week, there is a great grill-

ing session on the IGRY Meadow with music. DJ will play for you.

The Board has made every effort to make this year's IGRY GAMES even better than in previous years. We cordially invite you to participate.

*Text: Patryk Stępień*

Contact via **student self-government social media** or by e-mail to [biuro@samorzad.polsl.pl](mailto:biuro@samorzad.polsl.pl). ■



Webpage with **IGRY GAMES** programme



**IGRY GAMES** Fan page



**IGRY GAMES** events webpage



# PUBLISHING NEWS

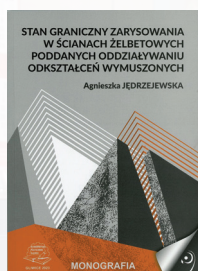


## ALGORYTMION COMPETITION. THE QUALIFIERS 2010 - 2014. VOL 1

**RAFAŁ BROCIEK, MARIUSZ PLESZCZYŃSKI, ZBIGNIEW MARSZAŁEK, ANDRZEJ SIKORA,  
ADAM ZIELONKA, MIROSŁAW WITKOWSKI, MARCIN WOŹNIAK**

Ed. I, 2023, PLN 21.00, p. 143

Due to the rapidly developing digitization of the modern world, algorithmic thinking skills are some of the most valuable qualities a modern engineer, scientist, and regular user of the latest technologies should have. The computer and mathematical knowledge contest "Algorithm" has been organized for many years to meet this challenge. It is dedicated primarily to secondary school pupils enthusiastic about solving algorithmic difficulties. The paper presents the competition tasks from 2010-2014 with a proposal for their solutions and implementation in C++ and Python.

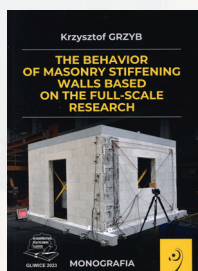


## LIMIT THE STATE OF SCRATCHES IN REINFORCED CONCRETE WALLS SUBJECTED TO FORCE DEFORMATION

**AGNIESZKA JĘDRZEJEWSKA**

Ed. I, 2023, PLN 23.10, p. 155

The monograph is a comprehensive and in-depth study of scratching reinforced concrete walls due to the restriction of the freedom of deformation under the action of forced deformation from the point of view of meeting the conditions of the limited state of scratching. The paper presents selected laboratory tests – foreign and own – of massive reinforced concrete elements under restricted freedom of deformation, aimed at experimental determination of the influence of the degree of reinforcement and thickness of the casing on the spacing and width of the scratch.

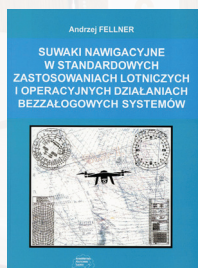


## THE BEHAVIOUR OF MASONRY STIFFENING WALLS BASED ON FULL-SCALE RESEARCH

**KRZYSZTOF GRZYB**

Ed. I, 2023, PLN 37.80, p. 276

The brick stiffening walls aim to ensure the geometric immutability of the building, reduce horizontal displacements of the structure, and ensure the overall comfort of use of the structure. Stiffeners carry horizontal loads present in the wall plane. They can be caused by the influence of wind, uneven subsidence of the substrate, or negative influences of mining exploitation (shocks, deformations of the substrate). The aim of the monograph is a theoretical and experimental identification of the problems of stiffening walls, motivated by a range of factors described in detail in the paper.

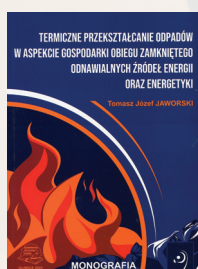


## NAVIGATION SLIDERS FOR STANDARD AEROSPACE APPLICATIONS AND OPERATIONAL ACTIVITIES OF UNMANNED SYSTEMS

**ANDRZEJ FELLNER**

Ed. I, 2023, PLN 39.90, p. 265

The manual synthesizes the knowledge necessary for initial and direct navigation preparation for ground and flight personnel and pilots/operators of unmanned aerial systems. It was created based on lectures and workshops in the air navigation course for students of the Faculty of Transport and Aviation Engineering of the Silesian University of Technology and classes conducted in certified aviation training centres. The manual has been developed using the applicable international requirements, following the applicable EASA syllabus "061.00.00.00 GENERAL NAVIGATION" and "062.00.00.00 RADIO NAVIGATION", and takes into account the requirements of ICAO resolutions: A36-23/A37-11 Performance-based navigation global goals, included in ICAO Doc's PBN Manual 9613".



## THERMAL TRANSFORMATION OF WASTE IN THE ASPECT OF CIRCULAR ECONOMY OF RENEWABLE ENERGY AND ENERGY SOURCES

**TOMASZ JÓZEF JAWORSKI**

Ed. I, 2023, PLN 23.10, p. 150

The monograph includes the analysis of waste as a source of renewable energy and a future resource and energy under the guidelines of the idea of the GOZ. It presents information on waste incineration with energy recovery or integrated processes of thermal waste treatment, gasification, pyrolysis, and plasma process with chemical processes. The study was created mainly because of scarce information on the possibility of managing waste in a way other than raw material recycling.

# POSITIONS, DEGREES, AND ACADEMIC TITLES

## AWARDED DOCTORAL DEGREES

### Dr Eng. Marcin GAJDZIK

Silesian University of Technology – PhD student. Supervisor: Dr Hab. Eng. Anna Timofiejczuk, Prof. of the Silesian University of Technology. Thesis topic: „Identification and minimization of threats in embedded systems during the maintenance of car vehicles, under Industry 4.0 concept.” I am pursuing a Doctor of Engineering and Technical Sciences degree. Discipline - mechanical engineering. Resolution of the Mechanical Engineering Discipline Council of April 24th, 2024.

### Dr Eng. Łukasz GLODEK

PROPOINT S.A. Supervisor: Dr Hab. Eng. Witold Nocoń, prof. of the Silesian University of Technology Thesis topic: „Use of fuzzy systems to evaluate the quality of models for the virtual commissioning of industrial automation systems.” Conferring the degree of Doctor of Engineering and Technical Sciences. Discipline – automation, electronics, electrical engineering, and space technologies. Resolution of the Automation, Electronics, Electrical Engineering and Space Technologies Discipline Council of April 16th, 2024.

### Dr Eng. Ryszard GRZESIK

Grupa Azoty Zakłady Azotowe Kędzierzyn S.A. Supervisor: Dr Hab. Eng. Nikodem Kuźnik, prof. of the Silesian University of Technology Thesis topic: „Innovative chelates for fertilizer purposes.” Conferring the degree of Doctor of Engineering and Technical Sciences. Discipline - chemical engineering. Resolution of the Chemical Engineering Discipline Council of April 10th, 2024

### Dr Eng. Monikaa HEBA

Silesian University of Technology – PhD student. Supervisor: Dr Hab. Eng. Nikodem Kuźnik, prof. of the Silesian University of Technology Thesis topic: „Studies on catalytic racemization in dynamic kinetic resolution.” Conferring the degree of Doctor of Exact and Natural Sciences. Discipline – chemical sciences. Resolution of the Chemical Sciences Discipline Council of April 17th, 2024.

### Dr Eng. Joachim JAROSZ

Silesian University of Technology – PhD student. Supervisor: Dr Hab. Eng. Adam Długosz, prof. of Silesian University of Technology Thesis topic: „Optimizing the shape and boundary conditions of the after-treatment component.” Conferring the degree of Doctor of Engineering and Technical Sciences. Discipline - mechanical engineering. Resolution of the Mechanical Engineering Discipline Council of March 27th, 2024.

### Dr Eng. Michał JURECZKO

Silesian University of Technology – PhD student. Supervisor: Dr Hab. Eng. Dariusz Bartocha, prof. of Silesian University of Technology Thesis topic: „Computer simulation of the mold cavity filling process in the Lost Foam method, taking into account the impact of model gasification and gas evacuation.” Conferring the degree of Doctor of Engineering and Technical Sciences. Discipline - materials engineering. Resolution of the Materials Engineering Discipline Council of March 19th, 2024

### Dr Eng. Artur KRÓL

Silesian University of Technology – PhD student. Supervisor: Dr Hab. Eng. Anna Timofiejczuk, Prof. of the Silesian University of Technology Thesis topic: Engineering knowledge management using the Digital Twins Method Conferring the Doctor of Engineering and Technical Sciences degree. Discipline - mechanical engineering. Resolution of the Mechanical Engineering Discipline Council of April 24th, 2024.

### Dr Eng. Anna LUBOSZ

Silesian University of Technology – PhD student. Supervisor: Dr Hab. Eng. Jan Drenda. Thesis topic: „The impact of the use of cooling vests on the climatic working conditions of miners.” Conferring the degree of Doctor of Engineering and Technical Sciences. Discipline - environmental engineering, mining, and energy. Resolution of the Environmental Engineering, Mining and Energy Discipline Council of April 25th, 2024.

### Dr Eng. Sergiusz MANDRELA

Silesian University of Technology – PhD student. Supervisor: Prof. Dr Hab. Eng. Wojciech Adamczyk. Thesis topic: „Development of a mathematical model of the phenomenon of heavy metal emissions to air, water, and land as a result of the combustion of solid fuels in energy facilities.” Conferring the degree of Doctor of Engineering and Technical Sciences. Discipline - environmental engineering, mining, and energy. Resolution of the Environmental Engineering, Mining and Energy Discipline Council of April 25th, 2024.

### Dr Eng. Krzysztof MATEJA

Silesian University of Technology – PhD student. Supervisor: Dr Hab. Eng. Wojciech Skarka, prof. of Silesian

University of Technology Thesis topic: „The method of increasing the flight endurance of vertical take-off and landing Unmanned Aerial Vehicle.” Conferring the degree of Doctor of Engineering and Technical Sciences with distinction. Discipline - mechanical engineering. Resolution of the Mechanical Engineering Discipline Council of April 24th, 2024.

### Dr Eng. Piotr OLESIK

Łukasiewicz Research Network – Institute of New Chemical Syntheses. Supervisor: Dr Hab. Eng. Mateusz Koziol, prof. of Silesian University of Technology. Auxiliary supervisor - Dr Eng. Tomasz Pawlik. Thesis topic: „The effect of addition of glassy carbon particles at different grain size on properties of heterophase HDPE matrix composites made by FDM 3D-printing”. Conferring the degree of Doctor of Engineering and Technical Sciences with distinction.

Discipline - materials engineering. Resolution of the Materials Engineering Discipline Council of April 24th, 2024

### Dr Eng. Małgorzata OSADNIK

Łukasiewicz Research Network – IMN Centre for Powder and Composite Materials. Supervisor: Dr Hab. Eng. Grzegorz Moskal, Prof. of Silesian University of Technology Auxiliary Supervisor: Dr Hab. Eng. Adriana Wrona. Thesis topic: „Physico-chemical properties of molybdenum-based alloy material with the addition of rhenium produced by powder metallurgy techniques.” Conferring the degree of Doctor of Engineering and Technical Sciences. Discipline - materials engineering. Resolution of the Materials Engineering Discipline Council of April 24th, 2024

### Dr Eng. Arch. Sandra PRZEPIÓRKOWSKA

MEDUSA Group Sp. z o.o. S.K. Supervisor: Dr Hab. Eng. Waclaw Kuś, prof. of the Silesian University of Technology Thesis topic: „Multi-layered architecture, Deconstruction, reuse, and recycling of materials as an ecological alternative to traditional construction. Conferring the degree of Doctor of Engineering and Technical Sciences. Discipline - architecture and urban planning. Resolution of the Architecture and Urban Planning Discipline Council of March 25th, 2024.

### Dr Eng. Radosław ROZMUŚ

Łukasiewicz – GIT Research Group on Properties and Structure of Materials. Supervisor: Dr Hab. Eng. Krzysztof Radwański. Auxiliary Supervisor: Dr Hab. Eng. Radosław Swadźba. Thesis topic: „Effect of the chemical composition and processing parameters on the microstructure and mechanical properties of the bars subjected to innovative XTP process.” Conferring the degree of Doctor of Engineering and Technical Sciences with distinction. Discipline - materials engineering. Resolution of the Materials Engineering Discipline Council of April 24th, 2024

### Dr Eng. Przemysław SEBASTIAN

Silesian University of Technology – PhD student. Supervisor: Dr Hab. Eng. Waclaw Kuś, prof. of Silesian University of Technology. Thesis topic: „Optimization of automotive suspension components with consideration of their unstable behaviour.” Conferring the degree of Doctor of Engineering and Technical Sciences with distinction. Discipline - mechanical engineering. Resolution of the Mechanical Engineering Discipline Council of March 27th, 2024.

### Dr Eng. Grzegorz STANDO

Silesian University of Technology – PhD student. Supervisor: Dr Hab. Eng. Dawid Janas, prof. of Silesian University of Technology Thesis topic: „Development of high-performance composites based on non-functionalized carbon nanostructures.” Conferring the degree of Doctor of Exact and Natural Sciences. Discipline – chemical sciences. Resolution of the Chemical Sciences Discipline Council of April 17th, 2024.

### Dr Eng. Dariusz TERCKI

Synthos S.A. Supervisor: Prof. Dr Hab. Eng. Beata Orlńska. Auxiliary Supervisor: Dr Hab. Eng. Marcin Sajdak, prof. of Silesian University of Technology Thesis topic: „Synthesis of innovative functionalized styrene-butadiene nanocomposites by polymerization method in Pickering emulsion.” Conferring the degree of Doctor of Engineering and Technical Sciences. Discipline - chemical engineering. Resolution of the Chemical Engineering Discipline Council of April 10th, 2024

### Dr Eng. Tomasz WASIAK

Silesian University of Technology – PhD student. Supervisor: Dr Hab. Eng. Dawid Janas, prof. of Silesian University of Technology Thesis topic: New generation of catalysts based on nanomaterials for advanced organic chemistry. Conferring the degree of Doctor of Exact and Natural Sciences with honours. Discipline – chemical sciences. Resolution of the Chemical Sciences Discipline Council of April 17th, 2024.

### Dr Eng. Agata WIDUCH

Silesian University of Technology – PhD student. Supervisor: Prof. Dr Hab. Eng. Wojciech Adamczyk. Thesis topic: „Development of novel approaches for modelling dense granular flows.” Conferring the degree of Doctor of Engineering and Technical Sciences with distinction. Discipline - environmental engineering, mining, and energy. Resolution of the Environmental Engineering, Mining and Energy Discipline Council of April 25th, 2024.

### Dr Eng. Tomasz ZADOROŻNY

Silesian University of Technology – PhD student. Supervisor: Dr Hab. Eng. Mirosław Szczepaniak, prof. of the Silesian University of Technology Thesis topic: „Minimizing thermal deformation due to intelligent optimization of the location of fastening points in the weld component area.” Conferring the degree of Doctor of Engineering and Technical Sciences. Discipline - mechanical engineering. Resolution of the Mechanical Engineering Discipline Council of March 27th, 2024.

### Dr Rafał ZAWISZ

Oil service AD MOTO Rafał Zawisz. Supervisor: Dr Hab. Eng. Agnieszka Fornalczyk, prof. of Silesian University of Technology. Auxiliary supervisor - Dr Eng. Joanna Willner. Thesis topic: „Development of the method of processing used automotive catalysts to obtain material with sorption properties from them.” Conferring the degree of Doctor of Engineering and Technical Sciences. Discipline - materials engineering. Resolution of the Materials Engineering Discipline Council of April 24th, 2024

### Dr Eng. Szymon ŻYMEŁKA

Silesian University of Technology – PhD student. Supervisor: Dr Hab. Eng. Marek Fidał, prof. The Silesian University of Technology Thesis topic is „Development of semi-active shock absorber dynamic model and parameters identification methodology.” Conferring the degree of Doctor of Engineering and Technical Sciences. Discipline - mechanical engineering. Resolution of the Mechanical Engineering Discipline Council of March 27th, 2024.

## AWARDED DOCTORAL DEGREES OF HABILITATED DOCTOR

### Dr Hab. Eng. Arkadiusz CHRUŚCIEL

MEXEO Wiesław Hreczuch. Resolution of the Chemical Engineering Discipline Council. Discipline - chemical engineering on April 10th, 2024.

### Dr Hab. Eng. Tomasz JAROSZ

Silesian University of Technology Faculty of Chemistry – assistant professor. Resolution of the Chemical Discipline Council. Discipline – studies in chemistry, April 17th, 2024.

### Dr Hab. Joanna JAWORSKA

The Centre of Polymer and Carbon Materials PAS in Zabrze. Resolution of the Biomedical Engineering Discipline Council. Discipline - Biomedical Engineering March 21st, 2024.

### Dr Hab. Eng. Łukasz MAJKA

Silesian University of Technology Faculty of Electrical Engineering – assistant professor. Resolution of the Automation, Electronics, Electrical Engineering and Space Technologies Discipline Council Discipline – automation, electronics, electrical engineering, and space technologies on April 16th, 2024

### Dr Hab. Eng. Marcin STASZUK

Silesian University of Technology Faculty of Mechanical Engineering – assistant. Resolution of the Materials Engineering Discipline Council Discipline - materials engineering on February 20th, 2024

### Dr Hab. Zuzanna SZYMAŃSKA

University of Warsaw. Resolution of the Biomedical Engineering Discipline Council. Discipline - Biomedical Engineering March 21st, 2024.

### Dr Hab. Eng. Grzegorz TYTKO

Silesian University of Technology Faculty of Automatic Control, Electronics and Computer Science - assistant professor. Resolution of the Automation, Electronics, Electrical Engineering and Space Technologies Discipline Council. Discipline – automation, electronics, electrical engineering, and space technologies on April 16th, 2024.

### Dr Hab. Eng. Anna ZIĘBOWICZ

Silesian University of Technology Faculty of Biomedical Engineering – assistant professor. Resolution of the Biomedical Engineering Discipline Council. Discipline - Biomedical Engineering April 18th, 2024.

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# 100

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